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The CoEVOLUTION Quarterly

Acne may result from inaccurate self-reporting
— and be cured by good semantics.

Language, Thought, & Disease

by W. C. Ellerbroek, M.D.

No. 17 Spring 1978 *Subscription price: $12 a year* $3.50

Cover *I was so envious of the cover art (showing a woman about to step on a toy while her shadow is already falling down the stairs) on the 10 Nov. '77* **New Scientist** *that I wrote to the artist in England and asked him to do it for us. He did, twice. Once, on the cover, for "Language, Thought, & Disease" (p. 30), and again, on the back, for "Cops Without Guns," (p. 18). Robin Harris, 28, is based in London and regularly exhibits his paintings (done in acrylics). In 1979 Pierrot will publish a book of work from his travels to the States and elsewhere.*

—SB (Stewart Brand)

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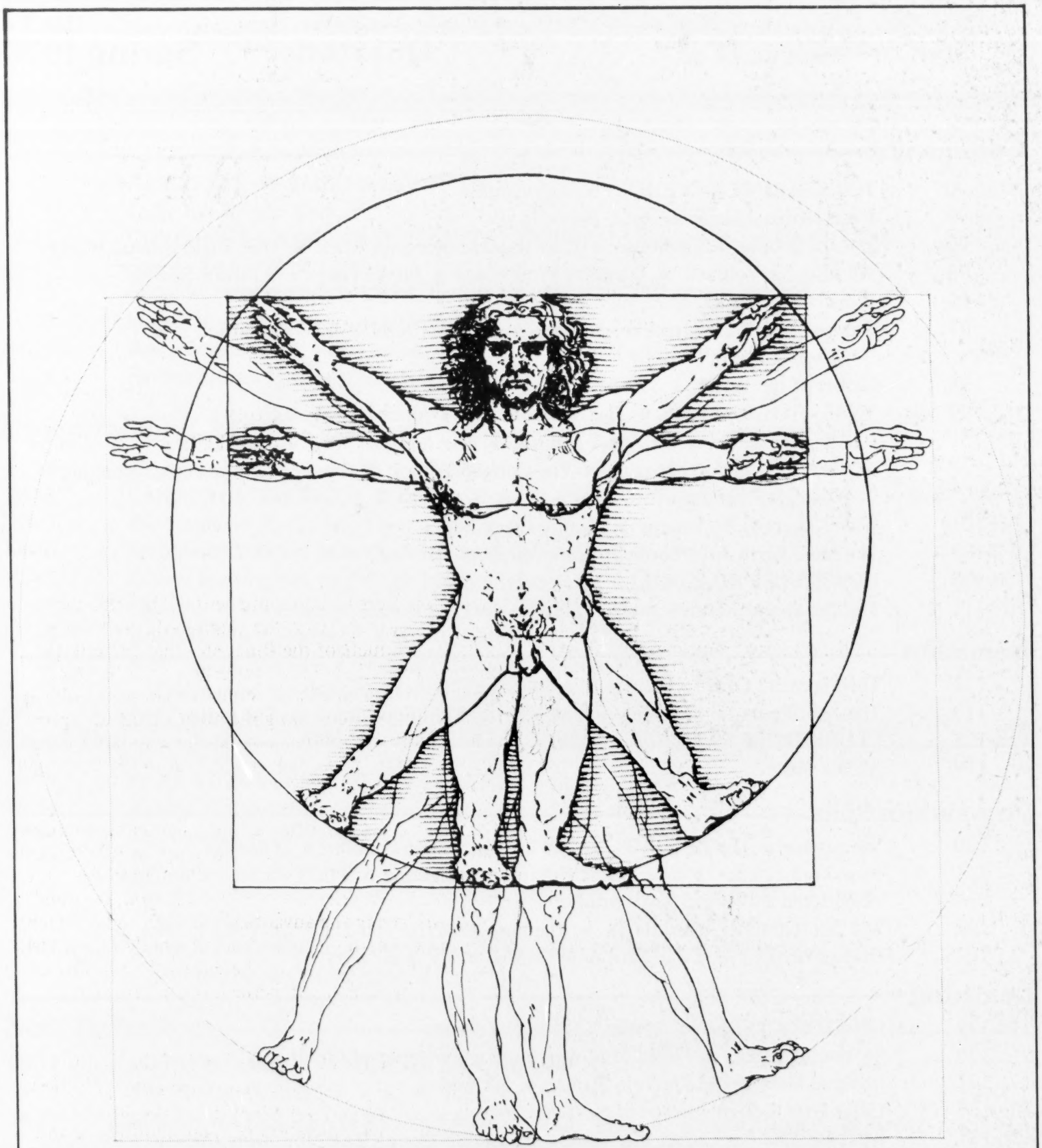
Politics



BOYCOTT
METRIC

Mark Primack (with Leonardo da Vinci)

A DEFENCE OF SACRED MEASURES

such as the foot, mile, acre and other
units of British metrology, and of the
ETERNAL and HUMAN values inherent therein,

against

the promotion of FALSE and ATHEISTIC values
through the proposed imposition of the IDOLATROUS
Metric System

by JOHN MICHELL

1 IT IS NECESSARY, for the reasons set out in this pamphlet, to oppose with the utmost vehemence the proposal to abandon our traditional standards of weight and measure in favour of the metric units invented at the French Revolution.

2 THE FUNDAMENTAL REASON for emphasising the importance of this issue is that it clearly epitomises the conflict between two contrasting philosophic or cosmological points of view. The first is expressed in the ancient belief, orthodox for many thousands of years and only recently denied, that eternal and human values (the two being inseparable) should govern the social order and institutions. According to this view, human nature, though always varying, remains essentially the same in all times. There is one philosophy, one religion, one science, though for each of these there are infinite expressions. Man and cosmos are alike in this, that both are constant and made in the same image. Both are therefore measured by the same standards, and for this purpose the ancient units of metrology were designed. Against this view is the newly received idea that the universe and its inhabitants are ever subject to purposeless change mechanically operated; that eternal values are a delusion, human values incidental; that the only true religion is idolatry, the worship of the chance material products of the time; and that the interests of the state idol are more important than those of the human individual and should be consulted above all else. By this reckoning the body of the idol provides a more appropriate source and standard of measures than the human frame, and this is the origin of the metric system.

The point at issue is whether an enlightened, humane and scientific civilization should adopt as its standards of measure units such as those still in use in England, which were formerly, and for good reason, regarded as sacred, having the advantages of tradition, inherent meaning and natural application, or whether the metric system, which has none of these qualities nor any of its own to replace them, is the more appropriate.

3 ACCORDING TO THE FIRST of the philosophies contrasted in the preceding paragraph the adoption of sacred standards of measure, together with an appreciation of their significance and value, is essential in order to achieve and maintain true civilization. [more →]

Nuclear energy and the metric system are all one as far as we're concerned. Both are despicable attempts by government to put an entire people on one "convenient" system. The convenience is an administrative illusion, as the one bright idea – nuclear – terrifies people, and the other – metric – infuriates them.

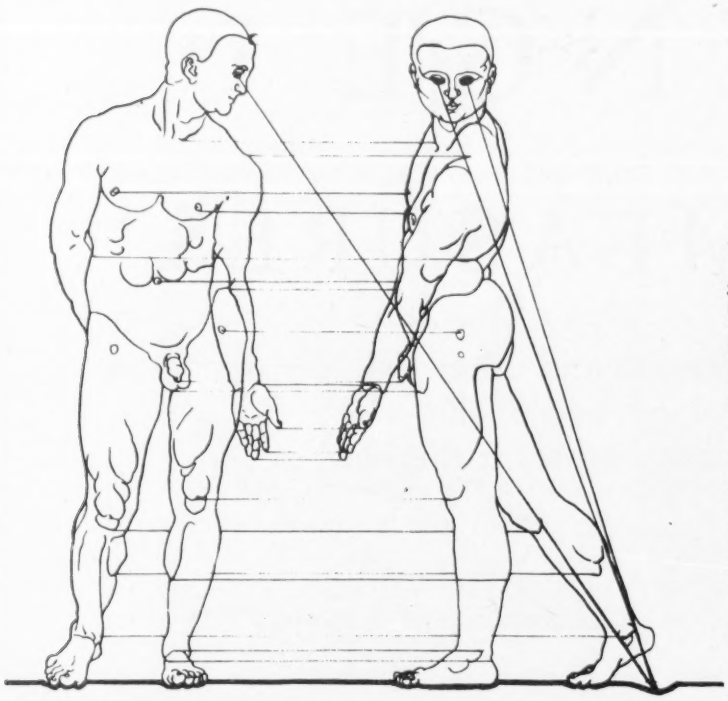
This paper is reprinted from the period (1968 - 1969 or so) of controversy in England over adoption of the metric system. (Metric was "adopted," led to five or six years of chaos, never quite took complete hold, and apparently now is waning gradually. The distrust of government it engendered persists.)

John Michell's article was self-published as "Radical-Traditionalist Paper No. 1" and is long out of print. Many of his books, however, are available – **The Earth Spirit** *(Avon Books),* **Views Over Atlantis** *(Abacus), and* **City of Revelation** *(Abacus).*

If you've got your doubts about having your inches, feet, yards, miles, quarts, gallons and such taken away, give thought to what you can do about it before we go the way of England. Bitch, boycott, and foment are the traditional political tools. If you like, the subscription insert at the back of this magazine has a copy of the illustration opposite which you can tear out and post to illustrate your complaint.

We're grateful to the British book designer Jon Goodchild for sending us this article, from one troubled country to another.

–SB



Mark Primack (with Albrecht Dürer)

4 SACRED MEASURES are those units which relate to natural constants on more than one scale and demonstrate the unity between the macrocosmic body of the universe and the human microcosm. The present British units, the foot, mile, acre, etc., are by this definition sacred; the metric units are not. The origins of the two systems and the implications in their use are contrasted in the following paragraphs.

5 THE FOOT AND THE OTHER linear and land measuring units that relate to it are of indefinable antiquity. They were known to the Sumerians, Chaldeans and the ancient Egyptians and appear once to have been universal, for they survive in different parts of the world, wherever the interests of the people are still given precedence over those of modern technology and commerce. Their advantages for all human purposes are obvious. A carpenter gauges an inch by the width of his thumb and its tenth part by his practiced eye; a builder estimates the length of a wall by the two yard span of his outstretched arms, and a surveyor paces by the yard. Cloth is sold by the cubit, the distance from elbow to finger tip, and other such units as the span and handbreadth were formerly used which have now generally become obsolete. Of course no two people have the same bodily dimensions, and the canonical man has never existed save as an idea or archetype. These traditional units are not, however, imprecise or inaccurate. Ancient societies regarded their standards of measure as their most sacred possessions and they have been preserved with extreme accuracy from the earliest times. A craftsman soon learns to what extent the parts of his own body deviate from the conventional standard and adjusts accordingly.

Sacred units of measure apply not only to the human scale but also to the astronomical. For this reason they were said, at a time when such language was more generally understood, to have been 'revealed' to men, not invented by them. The purpose of ancient science was to maintain and invigorate an esoteric tradition, the primeval heritage, rather than to pursue innovations, not, as evolutionists have supposed, because of any deficiencies in the positive intellect of early men, but because education was formally directed on Platonic principles towards the development of the inherent sense of proportion by means of musical and mathematical studies, with the result that cosmology, the science of discerning and codifying reality, was respected above all. According to Plato in **The Laws**, the stability of ancient civilization was maintained by the application of a canonized law of proportion, a code of musical harmonies, to which artists and musicians were obliged to refer in all compositions. The canon was essentially numerical, capable of being interpreted in the appropriate terms for use in the various arts and sciences, as music, architecture and astronomy, and extending to such matters as theology and the art of government. Its corresponding geometrical expression was the figure, conceived as the synthesis of all geometrical types, which St. John described as the ground-plan of the New Jerusalem and Plato as the mystical city of **The Republic** and **The Laws**. This figure was the symbol of the cosmos, and its dimensions, measured by the sacred units, the most important being the English foot and mile, reproduced the principal dimensions of the solar system, revealing accurate knowledge in some remote age of the measurements of Earth, Sun and Moon.

The metric system "violently broke up the customs and habits of the people as might have been done by some Greek or Tartar tyrant." – Napoleon

6 IT IS THUS CLAIMED on behalf of units of measurement such as the foot, furlong, mile, etc., whose preservation has hitherto been the honourable charge of the British nation, that they have a profounder significance than as mere arbitrary standards of length; that they are integral in the human view of the universe and can not therefore be excluded from any social scheme founded on human rather than idolatrous principles. The philosophy, which provides the justification for their use, recognizes the existence of a natural law, reigning within both human nature and the universal soul, some knowledge of which is essential to the orderly conduct of human affairs. The word human is here emphasised, because the interests of the true science and of the people are not naturally opposed but complementary, and when the principles of this science are again established, as they inevitably must if the reenactment of the destruction of Babylon on a more grandiose scale is to be averted, the conduct of affairs will be directed towards the benefit of the people as a whole rather than of one class, the financiers and industrialists. In this event, the advantage of adopting sacred units of measurement, those which are inherent in the natural order and not simply the reflection of a transient, atheistic political philosophy, will again become apparent.

7 THE HISTORY OF THE METRIC SYSTEM, by which it is proposed to replace our traditional system of metrology, is indicative of its character. At the time of the French Revolution, when the Goddess of Reason was ceremonially installed in Notre Dame, a number of people, many of whom were by all other standards apparently sane, were struck by the remarkable notion that the facts of nature, even the cycles of the sun and moon as manifest in the weeks and months of the calendar, might be varied by government decree. The revolutionary calendar, with its 10 month year and 20 hour day, the most spectacular feat of idolatry since the Tower of Babel, collapsed at once, but its companion, the metric system, was successfully imposed on the French people. According to Napoleon who lightened the penal sanctions by which its use was enforced, "it violently broke up the customs and habits of the people as might have been done by some Greek or Tartar tyrant." Despite popular rejection and following a number of bloody riots in which opposition to the compulsory use of the metre was suppressed, the metric system survived in France and was extended in the interest of uniformity to other European nations, always with the active assistance of the police or military.

8 THE METRE WAS ORIGINALLY INTENDED, following ancient precedent, to be a geodetic or earth-measuring unit, one ten-millionth part of a quadrant of the meridian measured through Paris. Its length was finally established in 1798, as accurately as the scientific methods of the time allowed, as equal to 39.37 inches. A particular reason why this length so commended itself to its inventors was that it corresponded to no existing or traditional unit. In other words, it was purposely designed to be unlike any unit which had ever been found convenient in actual use. The old sacred measures, properly understood, promote harmony, stability and knowledge. The new atheistic system, conceived in ignorance and arrogance and nurtured on the blood of the people, is the fitting servant of the forces of greed and materialism that are currently favouring its adoption in England.

The foot and the other linear and land measuring units that relate to it are of indefinable antiquity. They were known to the Sumerians, Chaldeans and the ancient Egyptians and appear once to have been universal.

Note. The French might have acquired a true sacred and scientific system at the beginning of the 18th century had they adopted Carrini's proposed geodetic foot, equal to one six-thousandth part of a minute of arc on the terrestrial meridian or 1.013 ft. This length is the same as the Greek foot by which the Parthenon was laid out and which, like all ancient units, was geodetic in reference.

9 THIS DEFENCE OF THE FOOT against the metre is based on two qualities that distinguish the foot from its rival. First, the foot is the established measure of the British people and has been so from the earliest times, at least since the building of Stonehenge. It is universally known and is used in many countries including America, where on account of the republican common sense and practicality of the people it is to be retained. To abandon it to enforce the use of an alien system can in no possible way benefit the public interest. The compulsory introduction of the metre, which in the improbable event of popular opinion being consulted, certainly would be rejected by the great majority, is thus clearly defined as an act of tyranny.

The second argument in favour of the foot may to some appear excessively mystical. It is however the more essential of the two, and is here included for the consideration of those who are sufficiently experienced to understand its implications, and with an appeal for the indulgence of those who are not. The foot, as stated above, is a sacred unit of ancient cosmology, designed to illustrate the hermetic philosophy of "man as the measure of all things" and to promote harmony on earth by assisting the influences of true proportion to become active in human affairs. The way of thought that attends the use of the foot locates the centre of the world within each individual, and encourages him to arrange his kingdom after the best possible model, the cosmic order. The ancient method of acquiring this model was not astronomy but initiation, for those who presented themselves, suitably prepared, to the priests of Hermes were admitted to the study of the sacred canon, which demonstrated the link between the created, visible world and the creative world of archetypal notions,

Another roadside confusion. This is how a culture loses itself.

and provided the criterion for the discernment of truth and illusion. Those insufficiently curious to seek initiation could rest assured on the word of initiates, such as that given by Plato, that "things are far better looked after than we can possibly conceive."

10 THAT THE INCH, FOOT, furlong, mile, acre etc., are of very ancient and sacred origin has been demonstrated elsewhere (see Bibliography). The fact may not appear of any great interest at the present time; but sacred means preordained and eternal, and to these epithets neither the metric system nor the theories behind its promotion have any claim. Naturally, each generation has the right to select whatever system of measurements it finds most appropriate, but it must then be content to be judged by its choice. It is therefore the right and duty of those concerned, before the final decision is made between the foot and the metre, to consider carefully the origin, history and meaning of the two systems in order to see which one is most in accordance with their ideals and interests and best designed to promote civilized human values.

The metre was finally established in 1798 as equal to 39.37 inches. A particular reason why this length so commended itself to its inventors was that it corresponded to no existing or traditional unit. It was purposely designed to be unlike any unit which had ever been found convenient in actual use.

11 IN JUNG'S PHRASE, the balance of the primordial world is upset. The art of government, as practised from the earliest times, is to discern and weigh the various interests within the community, preserving dynamic stability by application of the mystical law of proportion. The decline of this esoteric science and the fragmentation of the canonical society prepared the way for the development of the new philosophy of civilization, which attaches more importance to external form than to essential reality. In consequence, the respect formerly given to the concept of a sacred order based on eternal values was transferred to the 19th century doctrine of "the survival of the fittest," a pernicious phrase, favoured by dictators, millionaires and other modern aberrations, and advanced by them in justification for all excesses.

The proposal to introduce the metric system into England is another episode in a lengthy historical process, by which the natural rights of the individual, including that of participation in decisions affecting his own immediate interests, have been eroded, often by measures ostensibly designed to protect them. The destruction of local independence that followed from the Reformation; the confiscation of church and common lands on behalf of the state and its monopolists; the extinction of the labourer's small-holding, compensated for by the benefits of the poor law and workhouse; by such events the process is illustrated. Throughout the 18th century the central government increased its power over the people whose interests it was shortly to betray by the following proceeding. Soon after the Napoleonic war, the government adopted a remarkable theory of economics, which held that the country's wealth could be increased by the simple expedient of printing more money. This new paper money was issued through bankers and jobbers, to whom it mostly adhered, thus generating a new dominant class, whose wealth and influence soon exceeded all others. This class is strictly parasitic, because it neither creates nor produces anything of human value, nor does it profess to rule for the benefit of the people as a whole. Its growing influence has led naturally to a corresponding decrease in the fortunes of everyone else. Its values have become universally accepted and embodied in theories of government, the natural function of rulers – to balance the various interests within the community, – being disregarded. Finally, the native parasites have now been swallowed up by others larger and more anonymous, so that it has become no longer possible for the individual to identify the source of the authority by which he is governed.

The religion that has been engendered by this process is idolatry and the idol is that very "image of the beast" described by St. John in Revelation 13, whose ritual is the worship of material form. The appropriate unit by which this idol is measured is the metric system: and so it is proposed. Yet, vast and inflated though it is, the idol is but a created thing with no claims to immortality. After the nature of such monsters its appetite ever increases, and each year ever greater sacrifices are demanded of the people, until the time comes for its destruction, and of this there is no lack of portents. In contrast, the foot belongs to a tradition of which it has always been said that, even though it may be suppressed and vanish for centuries, it will always recur, for its spores are deeply embedded in human nature, and the truth to which it refers is constant and unique. The submergence of this tradition coincides with the dark periods of history; with its cyclical rebirth the light of civilization is restored. To institutionalise the dark ages by giving authority to the metric system would be an act of folly inconceivable in any other age but our own. ■

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The Traveller hasteth in the Evening

Wants pawn term, dare worsted ladle gull hoe lift wetter murder inner ladle cordage honor itch offer lodge dock florish. Disc ladle gull orphan worry ladle cluck wetter putty ladle rat hut, end fur disc raisin pimple caulder ladle rat rotten hut. Wan moaning rat rotten hut's murder colder inset: "Ladle rat rotten hut, heresy ladle basking winsome burden barter and shirker cockles. Tick disc ladle basking tudor cordage offer groin murder hoe lifts honor udder site offer florist. Shaker lake, dun stopper laundry wrote, end yonder nor sorghum stenches dun stopper torque wet strainers."

"Hoe-cake, murder," resplendent ladle rat rotten hut, end tickle ladle basking an stuttered oft. Honor wrote tudor cordage offer groin murder, ladle rat rotten hut mitten anomalous woof.

"Wail, wail, wail," set disc wicket woof, "evanescent ladle rat rotten hut! Wares or putty ladle gull goring wizard ladle basking?"

"Armor goring tumor groin murder's," reprisal ladle gull. "Grammars seeking bet. Armor ticking arson burden barter end shirker cockles."

"O hoe! Heifer blessing woke," setter wicket woof, butter taught tomb shelf, "Oil tickle shirt court tudor cordage offer groin murder. Oil ketchup wetter letter, an den – O bore!"

Soda wicket woof tucker shirt court, end whinney retched a cordage offer groin murder, picket inner widow an sore debtor pore oil worming worse lion inner bet. Inner flesh disc abdominal woof lipped honor betting adder rope. Zany pool dawn a groin murder's nut cup an gnat gun, any curdle dope inner bet.

Inner ladle wile ladle rat rotten hut a raft attar cordage an ranker dough bell. "Comb ink, sweat hard," setter wicket woof, disgracing is verse. Ladle rat rotten hut entity bet rum end stud buyer groin murder's bet. "Oh grammar," crater ladle gull, "Wart bag icer gut! A nervous sausage bag ice!" "Buttered lucky chew whiff, doling," whiskered disc ratchet woof, wetter wicket small. "Oh grammar, water bag noise! A nervous sore suture anomalous prognosis!" "Buttered small your whiff," inserter woof, ants mouse worse waddling. "Oh grammar, water bag mousey gut! A nervous sore suture bag mouse!"

Daze worry on forger nut gull's lest warts. Oil offer sodden throne offer carvers and sprinkling otter bet, disc curl and bloat Thursday woof ceased pore ladle rat rotten hut an garbled erupt.

Mural: Yonder nor sorghum stenches shut ladle gulls stopper torque wet strainers.

Does anyone know the true origin of this strangeness? It was sent to us by Wylie Wilson, Long Beach, California, xeroxed from Language in America *(1970, World Publishing Company), whose author, Charlton Laird, footnotes: "This tale exists in many forms because many people have had fun contributing to it, so that it has become a bit of folklore, a communal folk production of the literate mind, if that is not a contradiction in terms. I quote it from* Word Study, *XXVIII, no. 5 (May, 1953), 4. The editor pronounced it anonymous; it has been associated especially with the name of Professor H. C. Chase." All we know is it's a bitch to proofread. In fact, we found an error in the book ("grammer" instead of "grammar" once). Mural: Loss of redundancy is loss of correctability.*

– SB

Karin Vismara

Governor Brown at the Mental Hospitals

BY ORVILLE SCHELL

THERE WAS THIS ONE MAN who wanted to have his picture taken with Jerry," says a Brown staff intern. "He was one of the mental patients who came up to the Governor's office for the opening of their art show in the reception room. He was very strange-looking, probably badly retarded. He put his arm around Jerry. Jerry just stood there, something he wouldn't have done for anyone else. Very dignified. Kind. I saw a real flash of gentleness there. He had a look in his eyes which made me think that he was not just doing this for the publicity.

" 'You're my hero,' the retarded man said to him. And then Jerry replied, 'You're all heroes.' I really admired him that day."

At Agnews State Mental Hospital in the San Jose area, Brown speaks with a group of people from the Voluntary Action Center and the Junior League, who work in the hospital.

He tells them: "People sit back and wonder why their taxes keep going up – why it is that government keeps getting bigger. And it has gotten bigger. It has taken a dramatic jump forward under the leadership of individuals whose entire philosophy and public utterances suggest the exact opposite. I refer not only to my predecessor, but to President Carter's predecessor.

"So I think we have to ask ourselves – and I'm not raising this as a political question, but as just a way to understand the nature of reality that we all face – Why is it that despite the public philosophy of those in key positions, government gets bigger and

Most people seem to think a good politician is a contradiction in terms. Working with Governor Brown has made me question that. I think he is a good politician in the same sense that I think Peter Matthiessen and John McPhee are good writers or Dick Shew and Cecil Burnham of South Bristol, Maine, are good boat carpenters. Saints, none of them; generous craftsmen, all.

I work with Brown, as I worked with Ken Kesey years ago, because I was invited, because I think they are doing important work well, and because they are my friends and I learn from them. Some of what I'm learning I try to pass on in this magazine.

Orville Schell, author of **In the People's Republic** *and* **The Town that Fought to Save Itself**, *has just completed a two-year book project about the Governor and his office. The title is* **Brown** *(1978, 301 pp., $10 from Random House, 455 Hahn Rd., Westminster, MD 21157). It is practically the only writing about Jerry Brown I have seen that portrays the realities of the Governor's job and person accurately – or at least as accurately as the people around him see them. It's like good field anthropology.*

And it's riveting stuff. Random House is rushing the book into print (June), and various sections are being grabbed by magazines for reprinting. Most of them focus mainly on Brown the personality, which is interesting, but not nearly as interesting or perhaps consequential as how he does his job. Happily overlooked by the others is this chapter, reporting better than I've seen anywhere precisely what makes this politician good.

Our thanks to Lois Cissell, Coordinator of Volunteer Services at Agnews State Hospital, for helping provide the photographs.

–SB

Lawrence Robbins

At Agnews State Hospital in San Jose, Brown talks with volunteers and members of the advisory board.

bigger, more complex, more involved, and your taxes keep going up?

"The very simple reason is that it takes more than words to put some limit on that growth. There are certain needs and obligations in the community that just have to be taken care of, and if you don't do it — through some volunteer movement, some other arrangement outside of the public sector — then inevitably government will take the task and assume those obligations.

"If you take the mentally ill, the narcotics-abuse programs, the alcohol programs, child-care, nursing homes, hospitals, training activities and you meet every need that can be identified, you would have to double and possibly even triple the existing government activity that we now have at the state, local and federal level.

"Something as straightforward as police activity — how many police can you hire and how many are patrolling the streets? The ratio will never be high enough unless people assume a greater degree of responsibility for their own defense and protection . . .

"There is no substitute for neighborhoods, for mutual-support systems in the private sector. Whether it be neighbors who know each other, who have some responsibility for someone other than themselves and their family — you can't get away from it. The idea that you can put it on government if you want to is going to triple your taxes because then you have to hire a full-time person who doesn't have the commitment involved in it that you would to do that kind of work.

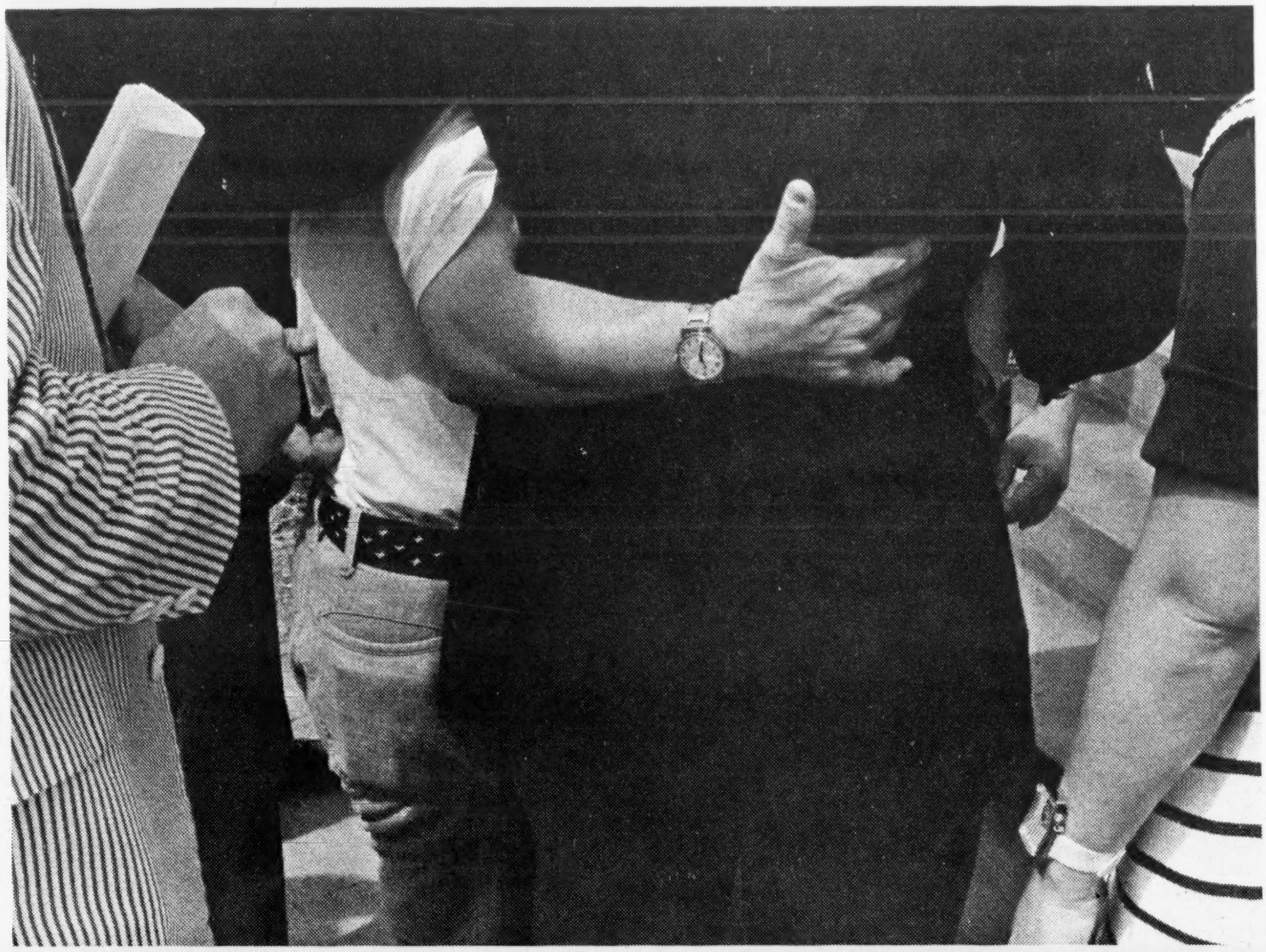
"That's my simple message: that voluntarism is not a luxury, it is a necessity for a civilized society that wants to truly meet its human needs. And we have to expand it in a dramatic way across a broad front of government and human activity. We have to find some way to re-create the spirit of neighborliness and mutual self-support that existed before the mobility and the anonymity and increasing information flow that has been the product of this very prosperous society . . .

"You may think you have more mobility and freedom and liberty — a "do-your-own-thing" kind of ethic — but in reality it comes back in the form of government, taxation, crime and mental confusion . . .

"When I went back to Williams, California, where my great-grandparents came from Germany in the 1850s, I walked into a nursing home. It was a very nice place — people were working hard cleaning and making sure the residents were attended, but I thought to myself, here's a place where elderly people are sent when they reach a certain age, and are paying $600 to $700 a month for strangers to take care of people that not too many years before would have been upstairs in the bedroom, or on rocking chairs sitting in the living room. It would have been part of the context of normal life.

"But in order to expand the productivity, the freedom, the mobility, the prosperity, we have segregated, we have specialized, so we have nursing homes for the old, child-care for the young, mental hospitals for those who act in a rather strange way or are different from the rest of us. And schools that start early and keep going till one's mid-twenties, longer if possible.

[more →]



Lawrence Robbins

"We're institutionalizing everybody. And I'd like to de-institutionalize everybody, I'd like to have a community that has a more human spirit to it."

ALTHOUGH IT IS THANKSGIVING DAY, pickets stand out in front of the broad avenue that leads up past several wards to the administration building of Napa State Hospital, a state-run mental institution. SACRAMENTO IS THE COO-COO'S NEST reads one placard. SACRAMENTO: YOU JUST BROKE THE CAMEL'S BACK reads another.

Understaffed even during normal times, the hospital has recently been unable even to attract enough qualified M.D.s and psychiatrists to fill vacant positions. Doctors have been leaving at an alarming rate because of overwork and bad conditions. Some federal funding has even been lost because California's own Department of Health has "decertified" the hospital as unsafe. At the breaking point, the present medical staff has announced that they will resign at the end of next month if the situation is not improved.

Yesterday Brown met in San Francisco with a group of doctors from the hospital. This morning, on the spur of the moment, he decides to spend his Thanksgiving Day at the hospital, talking to those of the medical staff who are willing to either forego or postpone their own holiday dinners.

It is 10 a.m. as I arrive with my three-year-old son. Brown is already at the hospital, accompanied by Elizabeth Coleman, his press secretary. He looks tired, and mentions having attended a long formal dinner at the Russian consulate the night before. Dr. D. Michael O'Connor, a young psychiatrist and executive director of the hospital whisks us away in his car to visit some of the wards.

The atmosphere of the hospital, with its well-kept lawns, paths and institutional buildings is akin to that of a college campus. It is a warm, sunny, fall day, and the grounds are dotted with patients. A misshapen man lurches down the sidewalk beside us. An older woman with sad blank eyes sits quietly under a tree and stares off into a clump of bushes. Two other patients are crying out to each other across a lawn, where a middle-aged woman with lips that have been carelessly lipsticked like those of a clown feeds a flock of pigeons while talking to herself.

"This is an acute ward," says Dr. O'Connor, gesturing toward one of the buildings. "You shouldn't bring your child inside."

Elizabeth Coleman takes my son over to watch the woman feeding the birds. We enter the ward.

The halls inside are bare. Our voices echo. Dr. O'Connor pulls out a bunch of keys and opens a door at the end of a corridor.

Loud Musak plays inside. An unshaven man sits on the floor and sucks his thumb. An elderly woman is slouched on a bench by the door, holding a hairbrush.

Lawrence Robbins

"How long have you been in here?" Brown asks her. She stares past him without reply, lost in some deep reverie of her own. Her eyes show no sign of recognizing his presence, much less his question. She strikes her cheek with the back of her hairbrush over and over again.

"I hope you have a nice Thanksgiving," he finally says thinly.

"I never thought I'd be talking to you," says Joan Finnegan, a young R.N., as Brown walks into the staff office. It has glass windows reinforced with wire mesh, and stands in the middle of the ward like a control tower at an airport.

"I'm very disturbed about state mental health care," Ms. Finnegan says nervously to Brown. "With only chemotherapy, there is no way we can really deal with these people. We're overloaded. The staff is demoralized." She seems unsure how to continue.

"If you have any suggestions, I'd like to have them," says Brown, absorbing the scene around him.

We move into a side room where some patients are playing pool. They recognize Brown and are intrigued by his presence here in the bowels of this locked ward. He shakes a few hands, almost as if he were campaigning, takes a cue from one of the patients and tries a shot. He knocks the eightball into a pocket.

"This system has been dysfunctional for a long time," Joan Finnegan is telling me out in the hall as a patient presents a drooping hand to Brown to shake. "But I think the fact that Brown came today shows his interest in grass-roots problems. I'm hopeful," she adds cautiously as we get ready to leave for the next ward.

Once we are outside, a lone reporter from a local Napa radio station approaches Brown.

"The mentally ill are that part of society we have the hardest time dealing with," says Brown into a tape recorder. "It's an outrage. It is a societal problem as well as a state problem. We've got to tie problems with mental health together with other aspects of society. It's just all a product of increasing mobility and anonymity – a failure of social glue. People are found in the streets in bizarre situations, committing crimes. They come here. They're given medication for a while, and then put right back out on the streets. It's a revolving door. But the streets are not a community. I accept a large measure of responsibility for making it better, but I can't do it alone."

"How come black people don't look like God?" a black patient who has been watching the interview suddenly asks Brown.

"How do you know they don't?"

The black patient listens impassively to Brown's response, and then begins laughing.

IN DR. O'CONNOR'S OFFICE, about a dozen staff doctors are eating Egg Fluff Donuts from a box and drinking instant coffee from Styrofoam cups. Brown walks in, and they introduce themselves, looking somewhat skeptical of the circumstances that have finally brought their Governor into the midst of their crisis on Thanksgiving.

"I'd just like to get a better picture of where we are," says Brown, sitting down, "where we're going and how we got here."

The doctors need no cue to release the avalanche of problems which confront the hospital.

"We're outnumbered. I have to treat two hundred patients." *[more →]*

Lawrence Robbins

At Agnews, Brown with (from the left) student volunteers from a local high school, resident Bill Bunker from the "Ragnews Press," and David Loberg, executive director of Agnews.

"We're buried in paper work and court appearances where we must become the adversary of the patients."

"The penal medical facilities are sending us more and more violent criminals who have supposedly been 'rehab-ed.' I don't mind working with violent people, but when they're mixed in with my old lady patients and gentle crazy people, it makes me afraid. They rape and steal."

"Each day we are forced to release people who we believe are capable of killing someone."

"We're not complaining about taking care of these people. We just need the staff to do it."

"We feel orphaned by the state. We can't even deliver minimal treatment. We practice defensive psychiatry."

There is an earnestness and strain in the voices of these men and women who appear on the brink of surrender. There is also anger.

"We have one of the most inferior mental health systems in the country. The state must make a commitment."

"I think that we may have to close the hospital down so people will realize what we do here. I don't think you're going to move," says a young psychiatrist, looking right at Brown, "and I don't think the state is going to move."

Brown listens. Then almost thinking out loud, he says, "As each individual in our society gives less, the institutions have to give more. They become substitutes for the family and community."

"Well, we can't give back the patients," retorts a doctor with contempt, perhaps misunderstanding Brown's comment as a criticism of them.

"All right," says Brown, going on the offensive. "How many of you in this room want to leave?"

Almost every doctor in the room raises his or her hand.

"I think what you have to have is a clear plan about what you want, or you won't have much credibility. Your crunch is a relatively difficult one for the legislators who approve my budget to see."

"We don't want another plan that won't happen," counters a doctor.

"It sounds like another delaying action," protests another. "Tomorrow someone may die. I could lose my license. It's a snake pit. We don't have time to work on a plan. We need help right now."

"Okay," says Brown with a suggestion of challenge in his voice. "Then you should just give up." He pauses and then adds, "But I think you should take a few days. I'm talking about getting something together for next week. I'll put it in my budget next month. We'll get all the decision-makers together here and work it out. It will be interesting."

"God! Life is getting so goddamned interesting," says a staff member who is the only M.D. on duty for almost two thousand patients during the night shift.

"All right. Let's talk about a coherent plan, and I don't think there will be any problem. We need a program with a time frame and a dollar sign."

The doctors are skeptical but appear to want to be convinced that Brown's suggestions will work. They seem to be struggling to extract some almost personal commitment from him.

"We want something with your imprimatur on it," says a psychiatrist.

Brown seems to be holding back from any sweeping promises. I have noticed over the months how he rarely falls into the temptation of overcommiting himself during the emotions of the moment.

"What about R.D. Laing's ideas?" says Brown, momentarily derailing the conversation. It is hard to tell whether he is joking or not.

"That stuff doesn't work on people off the streets of San Francisco who are here for two weeks," says a woman doctor, shaking her head in disbelief. "We don't have the time and money even to do research here."

"Okay," says Brown, returning to the matter at hand. "I'll be back next Friday. I am behind you."

The meeting, which has already lasted over two hours, does not exactly end, but rather disintegrates into small groups of people talking. Several patients look into the meeting room.

"It's a ray of hope, but certainly not sunshine," says Dr. O'Connor, walking outside among his patients.

"Well, what do you think happened here today?" Brown asks several other doctors, standing outside the meeting room under a tree.

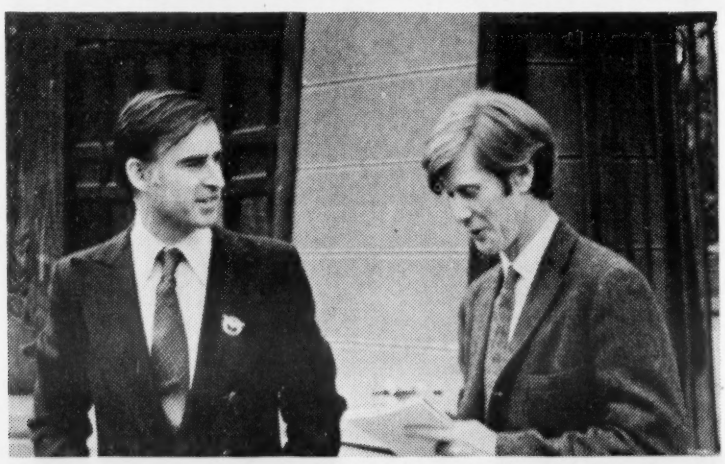
"We think you've seen the problem," replies a tall bearded psychiatrist.

"I don't know," says Brown elusively.

Several days later Brown proposes a crash program of $27.7 million to provide 3,000 new jobs for California's eleven state hospitals. "I told the Governor that 3-1/2 years of criminal neglect couldn't be put out by a twelfth hour attempt to spray the atmosphere with greenbacks," says State Assemblyman Frank Lanterman in reaction.

IT'S ALMOST 2 P.M. Brown walks out toward the parking lot and calls his sister in San Francisco on the radio telephone in his Plymouth to find out what time the Brown family will congregate for Thanksgiving dinner this evening.

"I'll just ride back to the city with Orville and his son," he says to his driver, Dale Rowlee, as he hangs up. "So why don't you head home." Elizabeth Coleman has already left.



Richard Silberman

Brown with journalist Orville Schell in Japan.

He removes his double-breasted blue pinstriped suit jacket, which he has worn all week, and gets into the cab of my pickup with my son, who is munching a cream cheese sandwich.

"I haven't eaten all day," he says as we pull out of the hospital's front gate. "Let's stop at a Burger King. Do you have any money?" The idea seems like a Thanksgiving parody. Providentially, no fast-food places except Denny's (which for unexplained reasons, Brown declines) are open. As we hit the open freeway, Brown nibbles on a slice of bread from my son's leftover lunch.

In the midst of the holiday traffic, a car full of black children passes us in the left lane. One recognizes Brown. Soon all the children are waving, laughing and pressing their noses against the car windows, making funny faces. Brown waves back, and then lifts my son onto his lap. It is strange to see this man whom I have followed for two years holding this small child.

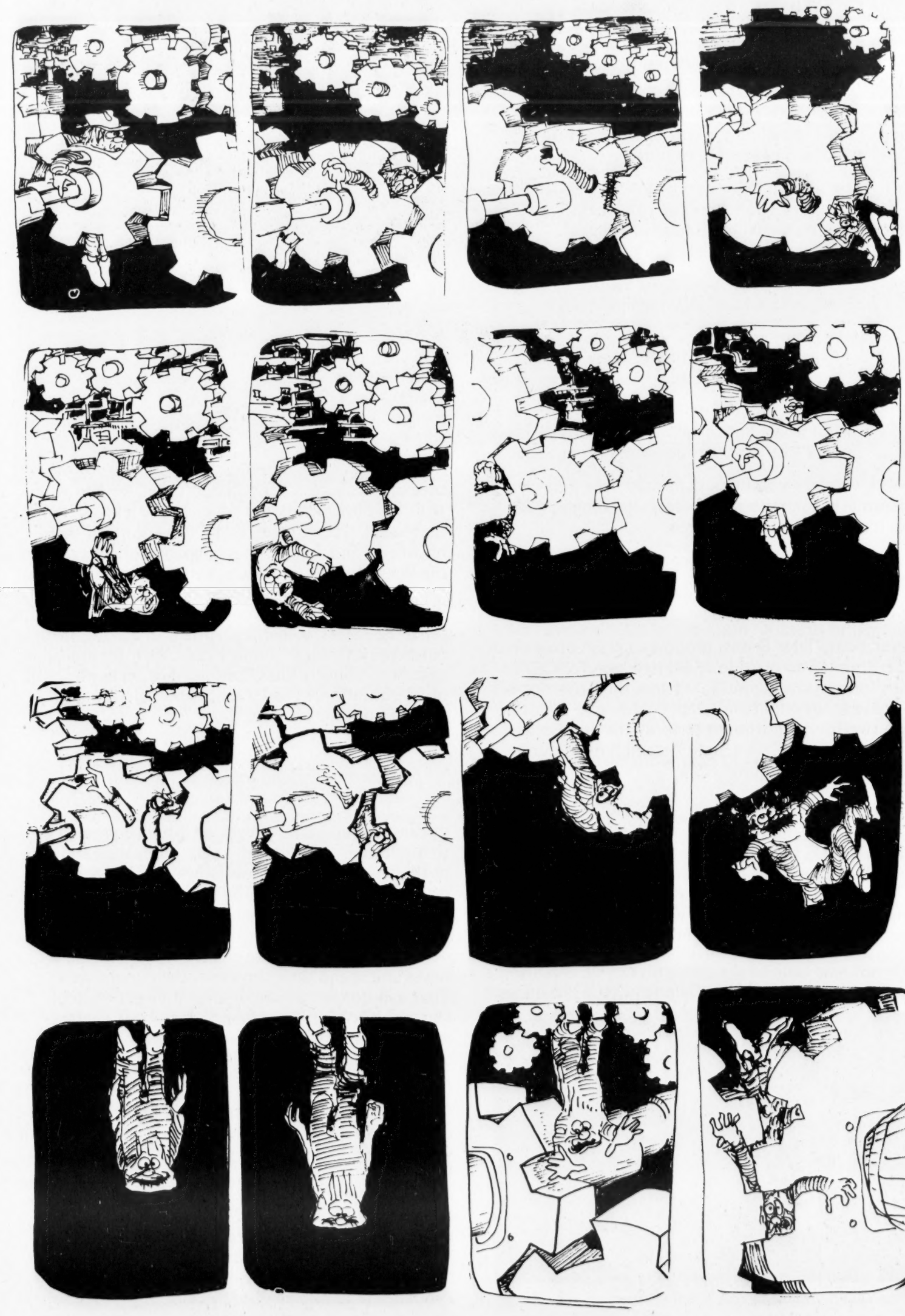
"Persuasion is very important in all this," says Brown, breaking a silence. "If you don't take time to work with the bureaucrats and officials five levels down, they rebel. It's not true that a Governor can snap his fingers and make things happen all the way down the lines. I don't know why people believe that. But I think we'll get some satisfaction at that hospital. We'll get some people from the Department of Health, some legislators, some Department of Finance people out here next week. I'll be back. We'll get everyone together. Some of these people have never met. It'll be an education. They'll erupt and fight, and we'll try to find some answers."

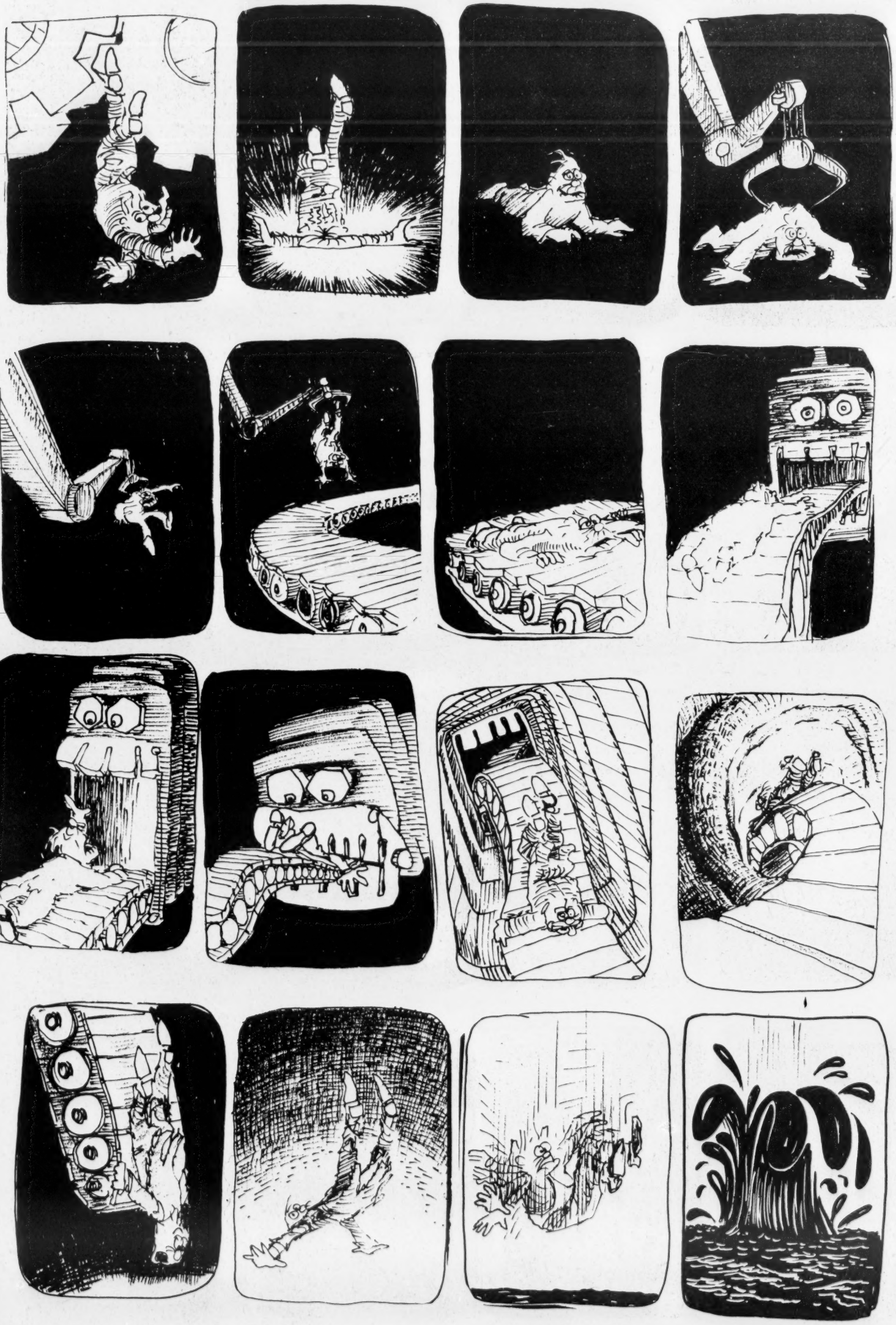
Later in the book Schell asks Brown, "Do you enjoy buying things? . . . When's the last time you bought something?" Reply:

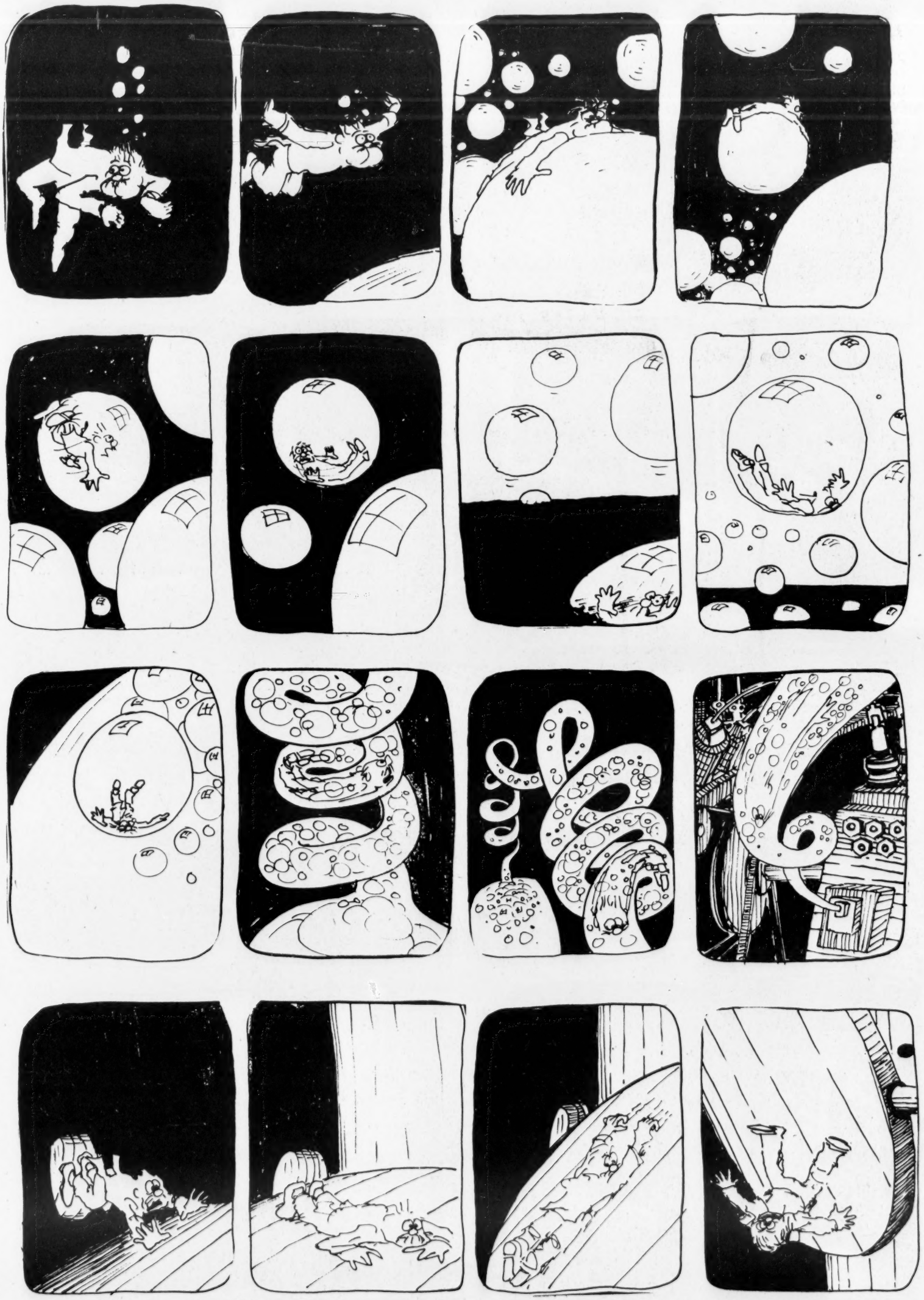
"I can't remember. It might be interesting to go out to buy things – but it's also very interesting to try to put together a mental hospital when it's in the state of decline. What is more interesting? Governors are not chosen for long periods of time. There are important questions. There's a great deal to do. I don't think governors are elected to indulge themselves and spend their time with their credit cards. They can do that before or after they get the job. One only has a certain amount of psychic energy, and if one directs it to accumulating goods and services, then he has less energy for evaluating ideas and focusing on the interactions of government."

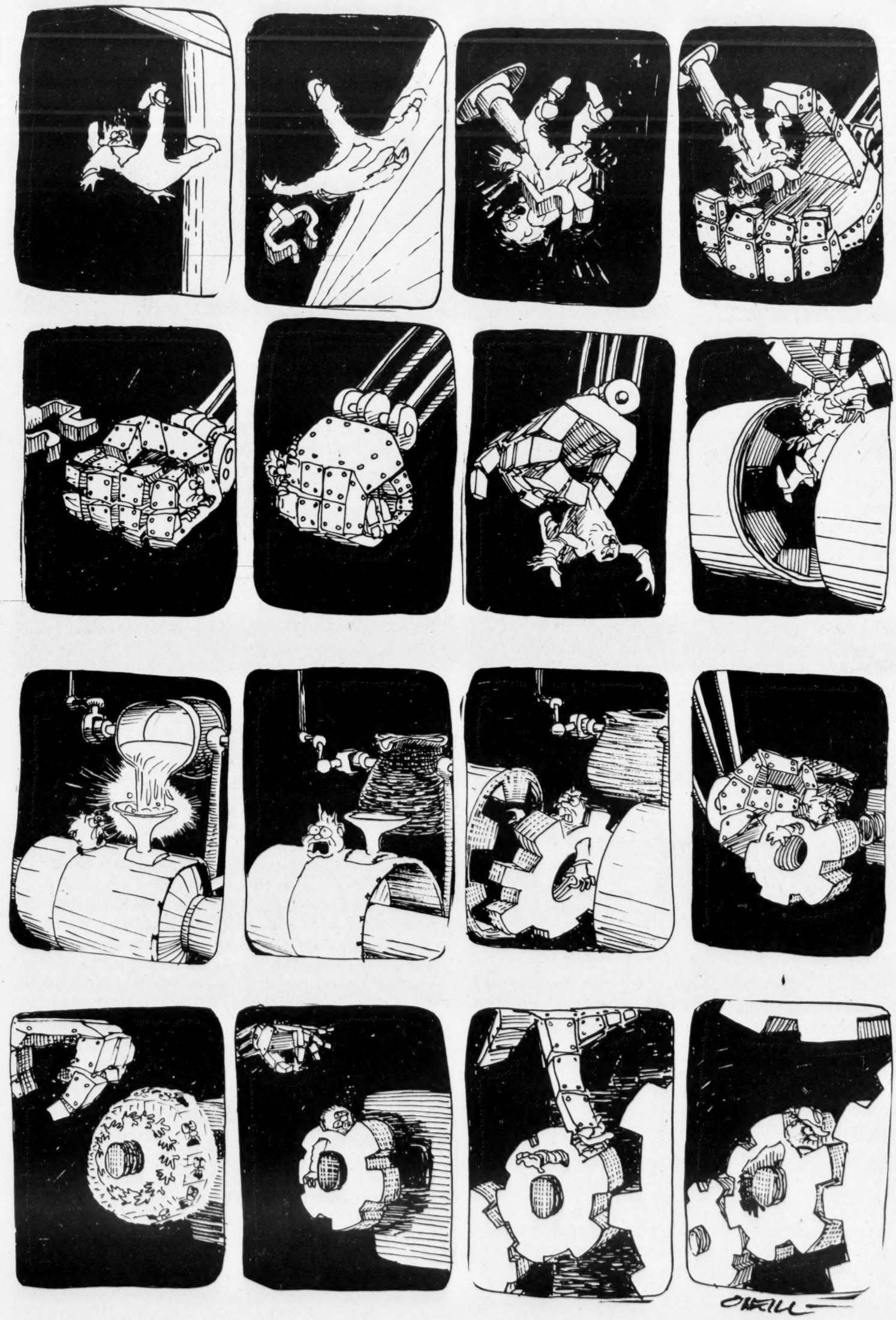
"I just spent the morning at a mental hospital, so the questions in my mind are: What is possible for people who go there? How much will it cost? Do we have the administrative capacity to carry it out? Can we attract doctors? Can we create an esprit de corps? Can we inspire confidence? Will the people be interested in it? Will the legislators be interested in it? Will it really make a better society? After that it's hard to say, 'Well now, what about a new car? a stereo set? or a television?' " ■

COG *by Dan O'Neill*

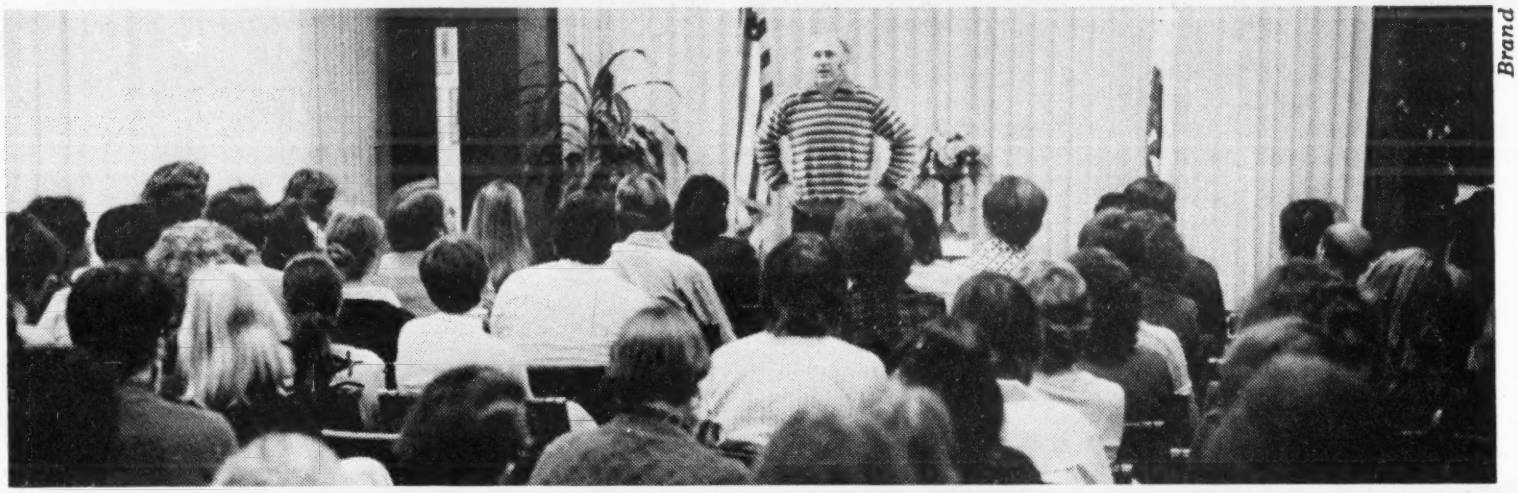







O'NEILL

COPS WITHOUT GUNS



Brand

KEN KESEY AT GOVERNOR BROWN'S OFFICE

Kesey had some reluctances about my printing this. The edited transcript of his talk in the California Governor's Council Room on October 20, 1977, seemed to him too long and a bit scattershot to make his point as well as he wanted to make it.

It has been 13 years since his last major book **Sometimes a Great Notion** *and it will be a while yet before the publication of the novel he's been working on all this time –* **The Demon Box.** *He's also immersed in using the income from the movie* **One Flew Over the Cuckoo's Nest** *to home-make a feature film based on the old 16mm footage of the Great Bus "Further," so he hadn't the time to hone his gun remarks fine enough to match his novels. To get the message out some way, we settled on a narrative account by me of his talk, with abundant use of the tape.*

Kesey faced, that noon, a roomful of something over a hundred state bureaucrats ranging from Cabinet level to clerical, a congenial motley. Himself a motley of old outlaw and aggrieved citizen, Kesey began by explaining how he got interested in police and their guns.

Over a year ago Kesey and his 16-year-old son Zane were driving in Eugene, Oregon, Zane at the wheel. Suddenly there was a siren, a police car going the opposite direction flipped a U-turn, and smashed into the rear of Kesey's car. The cars were creamed but no one was hurt, and everyone went their separate ways.

Kesey: "Then five days later we got a thing in the mail charging Zane with failing to yield to an emergency vehicle. I went down and raised Cain with everybody in the office. I said, 'That's like failing to yield to an emergency bullet. There's no way in hell he could have got out of the way of that car.' The fine was 30 bucks. We pled not guilty."

First there was a mistrial because of mixed accident reports. Then the charge was dropped to $10 and suspended. The Keseys appealed.

"At the next trial, there were five police came up there and testified that Zane should have moved into the right lane. However there was a guy in the right lane driving a pick-up. Big ol' regular Oregon guy, about 65, who jumped out, came over, said, 'Listen, there's any trouble about this, you give me a call. He just scared the WET outta me!' The cops didn't know this guy was there. We brought him on and it bamboozled 'em. Still the judge ruled that the cop was on his way to a burglary, and there have to be priorities, and Zane should have moved to the right. There's no way he could have moved. Zane was obeying the law as well as he could and was hit by a cop. We were found guilty. We appealed it.

"Finally, we went to a higher court and had a jury trial. And after a year or so had passed, after my insurance had tripled, after all the kids had to buy special insurance, after I finally got the rear end of my beautiful Pontiac '66 convertible fixed (and it still doesn't work 'cause the door doesn't open), we won the case.

"Between the time of the accident and the time we finally won the case, I got involved in the cops, I started looking into them."

The one who hit Zane, named Bond, two weeks later was involved in a drug bust. He set up two speed dealers to meet him in an apartment and brought in five other police to help make the arrest.

"So here's this dealer, opens the door, comes in. He's looking for Bond, whose undercover name is Freaky. Instead there was this cop holding a machine gun. The cop hadn't been checked out on the machine gun, he'd never heard of this case before, and he's looking down the barrel at this guy who comes in crazy as hell with a big .44 pistol that doesn't work, and for a second these two characters are held there in time pulling the triggers of these guns, and nothing's happening.

"The guy with the machine gun jumps back. Bond in the bathroom is pulling his gun and it goes off. The other cops who are hidden think that the guy's .44 has gone off, so they begin to shoot him. They shoot him all full of holes – 28 times. 'For 11 seconds,' it said in the transcript, 'there was nothing but roar and light.'

"The dealer who came in behind, who has just sort of come along on the deal – he runs outside. The cops

had shot him in both elbows as he ran away and his arms were flapping. He ran outside, cops shooting at him and yelling at him from behind. He commandeers a passing pick-up with another long-hair in it, scoots the guy over, and the guy pulls a gun – it's another cop. At that moment this kid's mind came apart.

"Well, all of the cops who were part of this event and in on the run-down of my son, between the time of that accident and now they've all killed somebody. In my home town."

Kesey changed the subject. The school where all his kids have gone has a two-lane highway in front of it. The logging trucks ignore the 20 mph speed limit, and there have been a lot of accidents.

"We can't slow 'em down. The state cops hate to stop 'em. All those loggers are bigger, tougher, meaner than the cops. They would much rather pull over a Volkswagen any time. Also they're kinda in with the truckers. There's this macho thing that the truckers and the cops have in common. If you're around them in a restaurant you can hear them talking and it's the same vocal tone that's coming off of all of them."

All the talk in the meetings at the school was about widening the road to four lanes. Kesey said that would only make for more accidents.

"The only thing that's going to make these roads safer is enforcement. How are we going to enforce? I don't like cop cars chasing other cars. I don't like cops shooting at people. I think we can move away from that. I think we've come to a time where we have the technology to lay down the gun and to get away from that freeway chase. You know, if a cop is chasing a guy down the boulevard, all he has to do is tap into the electronic network.

"We now have the technical ability to put a radar scope on the freeway that measures the rate that the cars are going by, photographs the back of those cars so that you get the license plate, and run it right through a computer. If that car is exceeding the speed limit by 11 miles per hour, it shows up at the end of that year on the license renewal. You go down to get the license for your car and all of a sudden you're paying four or five hundred dollars. That'll slow it down. It'll do it without the gun, without the chase and without all this macho stuff.

"The police will get that guy eventually. They don't have to get him right now. There's nowhere people are going to go to get away any more. I ran once because the cops were after me and went to Mexico, but I came back because this is where the action is. We're the frontier here. Nobody's gonna leave this country. Everybody who's tried, from Cleaver to Leary to Abbie Hoffman to all those draft evaders, they're all going to come back here because it's our country and it's where we want to fight this battle. It's just too nice here, it's just too interesting."

Kesey took a breath and drew the connection between his two examples. They're both about the chase, like on television. They're not about service. They inspire fear instead of respect.

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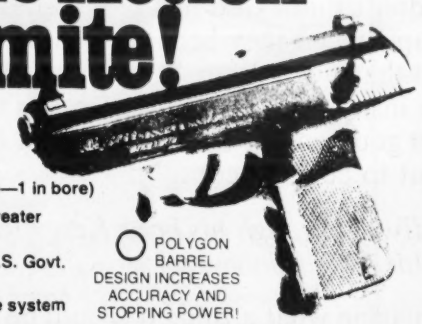

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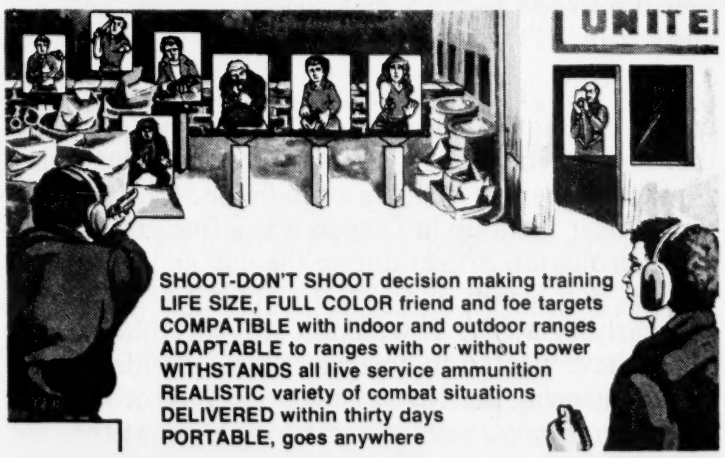
The offensive and defensive police equipment ads illustrating this article are from police magazines kindly loaned to us by Mike Manick, Chief of Police in Tiburon, California. He said he was interested in the gist of Kesey's argument, though it sounded a little dated to him – the sort of thing that would have appeared in these magazines three years ago. Now, he said, the talk is of de-fusing, crime prevention through community involvement, etc. The magazines are quite interesting: **The Police Chief**, *$12 per year, from International Assoc. of Chiefs of Police, Eleven Firstfield Road, Gaithersburg, MD 20760;* **Law & Order**, *$9 per year from Law & Order Magazine, 37 W. 38th St., New York, NY 10018.*



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"I spent time enough in jails to know the difference between a good cop and a bad cop. Best example is this. When Owsley was in jail, I went to see him at Terminal Island. And there was this old cop in the waiting room whose job it was to screen the people coming in to see that they had contacted the probation officer, to see that they had gone through all the bureaucratic channels to get to see their daddy or their husband or their brother who was in jail. He'd been there 27 years, and at a certain time in his life he had to make the decision whether he was going to accept these people's problems and work with them or whether he was going to turn them off and become a monster.

"The guy had made the good decision and he was a saint. You could see him be slow, you could see him

get on the phone, see him talk to these people and tell them who to call, how to get the right permission to get to see their relatives inside. It's a good example of a cop who makes the choice to be a help to society, a help to people.

"I don't think God makes a misdeal. I think most people when they become a cop it's because inside 'em that's what they want to be. From then on they can make a lot of other choices as to whether they'll be a good cop or a bad cop. Most of them really want to be good cops."

Halfway through his hour Kesey leapt to his conclusion . . .

"Imagine what a thing it would be if suddenly from the Governor's office the word went out through California – 'Put your guns down.' There would be such a jolt through this state. I mean, it'd be better than if you guys adopted the bottle bill. It'd give you the jump on Oregon."

. . . and invited discussion. Half or more of the room was men, but four-fifths of the questions and comments came from women.

Woman: "The Secretary of Health and Welfare Agency, Mario Obledo, had a press availability this morning, and it's my understanding that the press was just all over him because of the state's policy in California to not allow parole agents to carry guns. Evidently Mario took a great deal of heat from the press over his intention to continue this policy of no guns. I just find it kind of timely in view of your comments here today. We're continuing to get pressure to add to the arms situation and not get away from it."

Kesey: "It's going to take guts on some of the cops' part to lay that gun down, but there are people with that kind of courage. A probation officer already is a courageous person – that's a tough job. The probation officer I had up in Oregon was a fine guy. He was a probation officer during the day and then he'd run the Boy Scouts at night. I wouldn't want to see him carrying a gun. It wouldn't stop anything people would have wanted to do against him. Besides, he was influencing us. He was a good guy. It would have been funny to see him carrying a gun at the scout meeting anyway."

Woman: "What are your thoughts on registering guns?"

Kesey: "I don't see any reason to register the rifles. People are rarely killed with a rifle or a shotgun. I just think we need to lay down the pistols – and then they don't need to be registered either."

Man: "Can you think of any practical way of doing away with handguns?"

Kesey: "You don't start from the bottom and work up. You start from the top. You take 'em away from the official people. That can be done officially. That can be done by court order. That notion of 'When guns are outlawed only outlaws will have guns' – how true! That's the way it's always going to be out there. But you can't cater to the outlaws in any way. We have to confront it and say, 'Well, who can we take the guns away from easiest?' "

Bill Press (head of Brown's Office of Planning and Research): "You could take the guns away from the hunters pretty easily. I really fail to see your distinction between the pistols and the rifles and shotguns. I think that's a big macho trip too and you seem to glory in it, and I would like you to explain that a little bit."

Kesey: "Well, I really hadn't hunted lately until my kids got to the same age that I was when I first hunted. There's something primal about going out there in the fall and hunting for a deer. You don't get 'em that often, but you go hunt for 'em. I don't mean to glory in it if I sound like I have been. There's a real difference. A handgun is made to shoot a human and a deer rifle is made to shoot a deer. My kids have had long lectures about gun safety and know you never point a gun at anybody. You *never* point a gun at anybody. You don't have a loaded gun in the house. I leave the bolts out and on the shotguns the breech open. It was the way my dad taught me and the way his dad taught him."

Tony Kline (Governor's Legal Advisor): "To kill a pheasant is very different from killing a man, I'll grant you that for sure, but isn't it that same macho sensibility? I've heard hunters sitting at the diner just as you've heard cops, and frankly I get the same kind of vibe off the hunters as I do off the cops. I think you're trying to make a distinction that is intellectually possible but really spiritually very difficult to sustain. How many hunters do you think are killing birds to eat, or deer to eat?"

Kesey: "All I know. I know a lot of hunters and . . ."

Governor Brown: "Hey, wait a minute. Is anyone seriously thinking of taking away guns from hunters? Ridiculous. Let's talk about something real."

Kesey: "It's vegetarians. There's a lot of vegetarians here."

Kesey was smiling a welcome at Brown who had slipped into the audience unnoticed by the speaker. The room was now focused. Kesey is big enough that his voice is soft; you lean forward to hear him. Brown, not so big, has a voice with a rasp of energy on it. It's not loud but it penetrates walls. His challenges invite you to stand your ground. Having challenged the room, he turned on the speaker.

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Brown: "I don't even think you're gonna take away handguns from people, so why worry about long guns?"

Kesey: "I don't think you can. But I think you could find a little town somewhere that the chief of police will just say to the cops, 'Hey look, let's do it without guns.' "

Brown: "If the police want to do that, as an act of heroic courage, they could do it, but it's very hard for someone on the outside to say, 'Why don't you do that?' "

Kesey: "Isn't it society that gives them the power to carry the gun? Isn't it possible then for society to take that gun away?"

Brown: "When society wants that."

Kesey: "But I mean it doesn't come down to the police, whether THEY want it or not."

Brown: "No, but they would be in a very unique position . . ."

Kesey: "But see just how quick we do it, how quick we defend those cops. Just like we defend those damn truck drivers. Piss on 'em."

Laughter, consternation, point to Kesey. Brown subsides, pleased.

Woman: "If your family was home alone and they found an intruder, how would they protect themselves? With a gun or with law enforcement?"

Kesey: "I get a lot of people dropping by, I'm in the phone book and people know where I am, and sometimes in the summer I'm kneedeep in burnouts. And I worry about it. But I know that adding a gun there is like getting a Doberman. You add one more aspect of violence and pretty soon it's gonna come down on my family. I've told 'em what I expect 'em to do, where the phones are, how to make the call, the closest neighbors to get in touch with. My wife is . . . she would be fierce in a corner, so would my kids. They would use sticks and fire extinguishers, whatever they could. I think the first thing you do is run if you can.

"There are other ways to defend ourselves than with the gun. We're caught in a false dilemma where we think it's either this or this. Not true. Never true. There's a thousand other ways we haven't even thought about. Every time you put a gun over here there's a gun gonna crop up over here. You know that's true. You can dress the cops completely in Star Wars stuff and you're going to create on the other end of that another terrorist group that's going to be its other side of the coin. We can't kill all the terrorists, but we can make our peace officers real peace officers to where they're trying to bring peace instead of generate more violence."

Woman: "I think we'd quickly have a shortage of cops."

Kesey: "The ones that we'd be left with, though, would be hairy dudes. That's what we'd start with, and then pretty soon that in itself would attract. It'd be like the Green Bay Packers."

Woman: "Aren't we talking about a deeper philosophical argument about America itself?"

Kesey: "Truly."

Woman: "I mean, America is a country of violence. It's built on violence. The bobbie can afford not to carry a gun in England because he's looked at as an extension of that community, and the law enforcement element in this country is looked at as a subculture."

Kesey: "True."

Woman: "By itself and by the people. We're talking about an attitude and not just the guns. We talk about changing that and I don't know how we can do that."

Kesey: "I don't either. It's part of a syndrome, but we can stop that just the same way we can stop nuclear testing. We can tame that wild thing. It *works* for us. And by doing that I think that we will have a chance for this face-to-face community business to reoccur. We're not a nation built on violence. There's a lot of violence through the nation, but that's not what we're built on. It'd be too shifty if it were just built on violence. There's other stuff in us.

"I'll tell you, I've been in Turkey and in Cairo and in Mexico, and a lot of the time on the street in those countries I'm scared. Scared of the people and not just the officials, because there's a sense of violence everywhere. The notion that we're that much crazier than the rest of the world really isn't quite true if you get out. That's why people keep coming back here."

Woman: "Do you think we may have to go further in the wrong direction before we can go in the right direction?" *[more →]*

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Kesey: "Let's hope not. That's part of civilization – to be able to anticipate disasters and forestall them if we can. Kids are carrying guns in high schools now. They've taken guns away from kids in my kids' high school.

"It's like the dogs that are running loose. Unless you teach it, a dog doesn't know how to be a good dog. We had a bunch of sheep torn up last spring by police dogs – it's always German shepherds. We came back, there was nothing to do. We shot the dog, but by this time my dog had learned the trick and eventually we had to do her in too.

"The vet that worked on those sheep, she said they're losing like a thousand a week in the county there. One night, she said, one man lost 200 ewes that four dogs had got into and killed. He followed the trail of these dead sheep and found the dogs. They had pulled down a cow, and she had gone into labor and they chewed her udder off, killed the calf. She said the farmer said, 'I almost went crazy. I didn't have a gun, I didn't have anything I could do. I'd run one dog off and three would go back and get the calf.' He said, 'I almost went mad out there.'

"The taste of that in your mouth is the taste of civilization going down. When I stood out there and watched my sheep and watched this vet work on them, I felt a kinship with people going back thousands and thousands of years. 'The dogs have got the sheep!'

"I went to see the King Tut exhibit in Chicago, two of my kids and I. Tremendous exhibit. We stood in line about an hour to buy the tickets and then were in the Field Museum for about six hours before we got in to see Tut. There are thousands and thousands of people in this museum wandering past each other, sharing benches, opening doors for each other, being polite with each other. The racial friction is gone. All the black people – and it's half black half white because it's Chicago – they know that here's all these whiteys standing in line six hours to see this dead African.

"What you feel is civilization. It's a good feeling. I'm a fan of civilization, and when you feel it begin to dribble away from you it's a scary thing, especially if you have kids and are planning to have grandkids and are planning to have stuff prolong and be good after you die and after your will can't speak any more. I want things to go on and get better. I think even when you are afraid for civilization you've got to always be pulling for it."

The end of the hour is near. A subtle tone of winding-down enters the discussion.

Man: "Would you reflect on the role of prisons and punishment and capital punishment?"

Kesey: "No capital punishment. Flat out. What to do with the monsters I don't know.

"I was at Redwood City sheriff's honor camp – a good jail. One of the reasons I think it was good is because there were no guns at the camp. The cops did it without guns. There weren't any rifles. There weren't any night sticks. If it came down, there were seven cops and 100 prisoners.

"I'll tell you a good story. We were showing 'Shane' and there had been a race riot brewing because the hundred people up there was divided right down the middle, 50 white, 50 black. There had been a bunch of stuff happened, and there were some Mormons there and they're always stirring up stuff, and finally some prune jack had come in and everybody had got drunk during the day. The cops didn't know it, they just noticed people were getting looser.

"So we were all over in the cafeteria watching the last reel of 'Shane,' and the projector bulb burned out. Suddenly the lights were all on and here came a guy running, 'Yunh huhn, niggers've been over there hitting us with an axe,' and the crowd which was all mixed up black and white split, just like that. The black guys went this way and the white guys went that way. The black cops went with the black prisoners, white cops went with white prisoners. We were standing across the room glaring at each other and it was ready to be a full out riot.

"But I saw an amazing thing. This is why I think we're not a violent people. Within these two groups there was two other groups – the hawks and the doves. The hawks want to fight. The doves don't. The doves are able to speak across this line. So the white dove can talk to the black dove and pretty soon the doves are beginning to build up a strength and pretty soon the fight didn't happen. Because, given an equal situation like that in which it's not stirred up, the doves will win because they can get it together and the hawks can't. These are the sort of things that you learn in a prison situation – if you're given the opportunity."

Laughter.

Kesey: "It's like we've been conditioned by 'Kung Fu' to believe that every western town is made up of 98 bad guys and one good old coroner and a storekeeper. It's not true. It's the other way around. Out of 100 people, 98 of those people will be good and helpful. They will lend a hand if they feel like they can do it without getting their fingers shot off.

"Let's go eat, I'm hungry."

Applause. On his way back to work Brown asked me to introduce Kesey to his driver Martin Salazar, a highway patrolman who was not happy with the talk. Kesey spent half an hour with him. Martin felt hurt and angered by Kesey's apparent attitude about police. Kesey apologized, said he didn't mean it to sound that way. He felt bad about the misunderstanding the rest of the day.

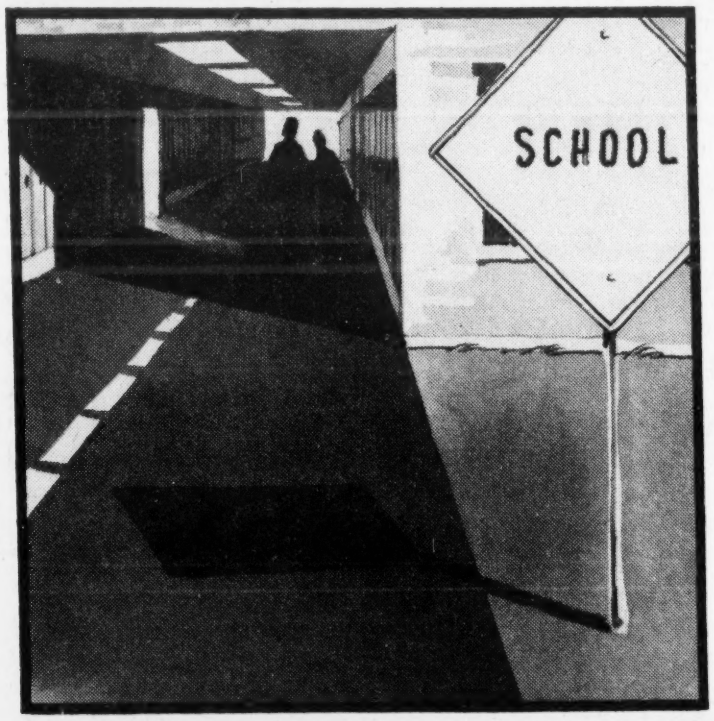
On the way to a highly philosophical lunch with aides Jacques Barzaghi and Rusty Schweickart, Kesey was met briefly by Governor Brown and Dinah Shore, who was televising an interview. "I just wanted to meet this man," she smiled, sticking out a hand to Kesey.

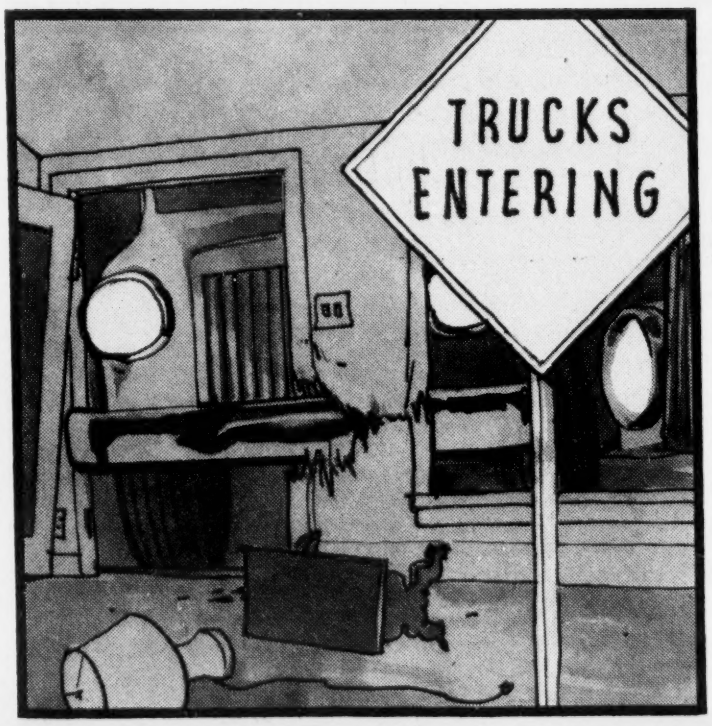
"Hello," Kesey smiled back, taking her hand carefully.

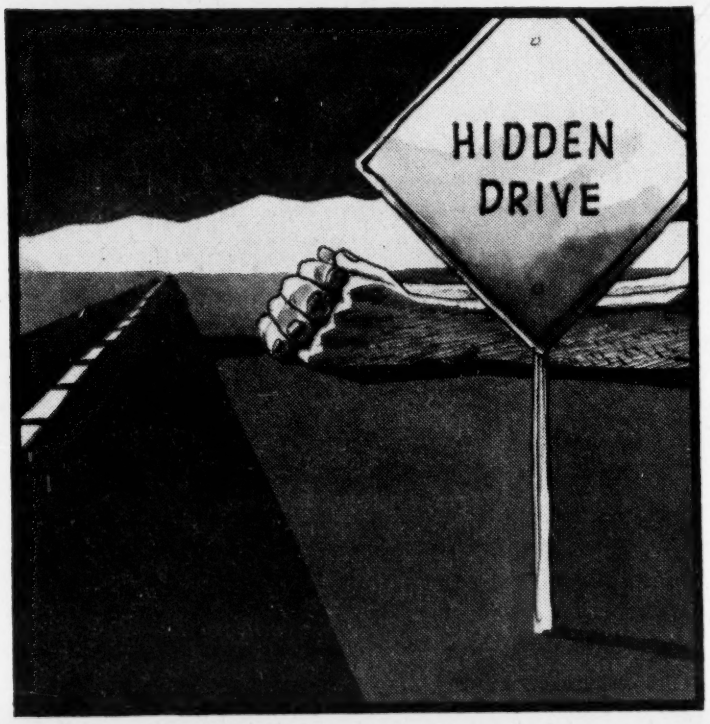
"What I wanted to say," he said later, "was 'My GOD you're beautiful!' " *–SB* ■

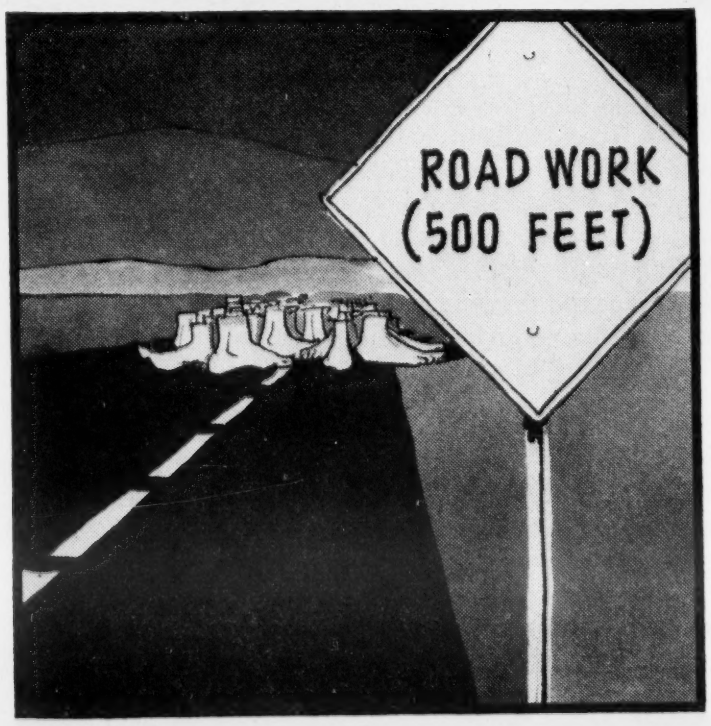
MORE YELLOW DIAMONDS

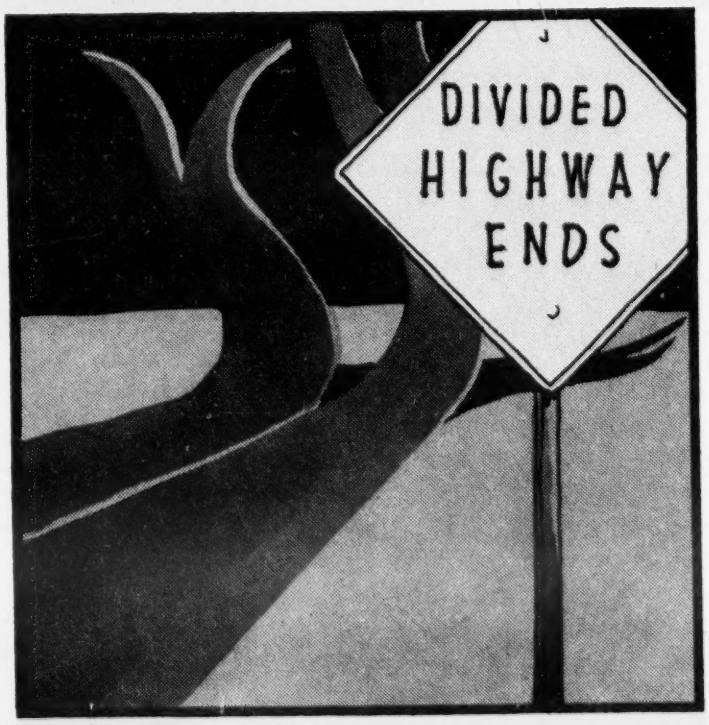
by Malcolm Wells











RECOMBINANT DNA, PAUL EHRLICH, AND FRIENDS OF THE EARTH

Lest it appear that we are trying to attack the wholly admirable Friends of the Earth organization, you should know that Ehrlich's letter criticizing FOE was sent to us by a loyal FOE staffer, Jim Harding.

The point and poignancy of the correspondence is how big simple issues, once joined, become unsimple; and how BAD/GOOD becomes goodbadgoodbadgoodbad. Many who would do good in the world become bruised and discouraged by that process. I wish they wouldn't. Detail work is what it's all about.

Paul Ehrlich, author of **Population Bomb** *and other population biology classics, is on FOE's Advisory Council. So was Lewis Thomas, author of* **Lives of a Cell** *and head of the Sloan Kettering Cancer Center, before he resigned in protest over FOE's lawsuit to have the NIH (National Institute of Health) recombinant DNA guidelines strictly enforced.*

Previously (Summer '77) we have printed DNA researcher James Watson's unalarmed views on this subject. Here appended is a recent paper by Bruce Ames on his lab's work with recombinant DNA in environmental testing for carcinogenic chemicals. How important is that? Well, according to a report in the 13 January 1978 issue of **Science** *the number of chemicals in the American Chemical Society's Chemical Abstracts Service is growing at an average rate of 6,000 new chemicals a week. Total in the registry is 4,039,907.*

Thomas H. Maugh II, in the **Science** *report, says: "Current estimates from EPA (Environment Protection Agency), indicate that there may be as many as 50,000 chemicals in everyday use, not including pesticides, pharmaceuticals, and food additives. EPA estimates that there may be as many as 1500 different active ingredients in pesticides. The Food and Drug Administration estimates that there are about 4000 active ingredients in drugs and about 2000 other compounds used as excipients to promote stability, cut down on growth of bacteria, and so forth. FDA also estimates that there are about 2500 additives used for nutritional value and flavoring and 3000 chemicals used to promote product life. The best estimate thus is that there are about 63,000 chemicals in common use. Small wonder then that determination of the safety of all commonly used chemicals is a massive project that may never be completely finished."*

To do a complete white-mice test for carcinogenicity of a single chemical costs about $150,000 and takes many months. A comparable Ames test costs $250 and takes two days. —SB

November 17, 1977

The Executive Committee
Board of Directors
Friends of the Earth
124 Spear Street
San Francisco, CA 94105

Dear Friends:

As a professional biologist, I have become increasingly concerned about the opposition to recombinant DNA research expressed by FOE and some other environmental groups. While there are valid reasons to be concerned about recombinant DNA technology, I think its hazards have been greatly exaggerated by some people. And some of the proposed action being taken against it could be counterproductive to the goals of the environmental movement in general and FOE in particular. Let me elaborate.

As you know, I have for a long time been interested in the social responsibility of scientists and how the results of scientific research affect public welfare. In the case of recombinant DNA research, I think the scientists involved have behaved admirably. Recognizing a possible serious hazard, they announced it to the public themselves and adopted voluntary restraints on their own research until the risks could be further examined.

Larry Nimmer

"FOE is in the position of helping to block work on the most promising techniques for detecting environmental carcinogens."

–Paul Ehrlich

As an evolutionist, I have been rather depressed by various features of the ensuing controversy. It has been stated that the research should be discontinued because it involves "meddling with evolution." *Homo sapiens* has been meddling with evolution in many ways and for a long time. We started in a big way when we domesticated plants and animals. We continue every time we alter the environment. In general, recombinant DNA research does not seem to represent a significant increase in the risks associated with such meddling – although it may significantly increase the rate at which we meddle. For example, if one wanted to create a bacterium that was highly resistant to all antibiotics, one would not do it by attempting to insert DNA from a tiger into its chromosome. The chances that recombinant DNA research might lead to the creation and escape of some kind of "super bug" seem extremely small. One must always remember that any laboratory creations would have to compete in nature with the highly specialized products of billions of years of evolution – and one would expect the products of evolution to have a considerable advantage. In addition, there is evidence that bacterial species have been swapping DNA among themselves for a very long time and perhaps even exchanging with eucaryotic (higher) organisms. Human investigators using recombinant DNA techniques thus are not necessarily performing the evolutionarily novel experiments that have been claimed.

I must add that I am less sanguine than some commentators on how rapidly certain benefits will accrue to humanity from recombinant DNA research. It is possible, for example, that cheaper insulin may be made available to diabetics. It will help improve systems for screening chemicals for carcinogenicity. Producing strains of nonleguminous crops that can fix their own nitrogen is a possibility, but what the other characteristics of such strains might be (i.e., how susceptible they would be to pests), and what sorts of yields they will produce remains to be seen. There is considerable reason for doubting that much can be gained by this route. And, large-scale intervention in human genetics will be possible, I suspect only in the distant future, if ever. It may never be socially desirable. In my view, the brightest promise of recombinant DNA is as a general research tool for molecular geneticists – a tool to use in the pursuit of the highest goal of science, understanding of the universe and of ourselves.

All of this is not to say that malign or careless use of recombinant DNA technology could not be responsible for a variety of disasters. But many other technologies – including those now in use in microbiology laboratories – are equally susceptible to misuse. As Sir Peter Medawar has pointed out, humanity has had a powerful technology for intervening in human genetics for a thousand years – selective breeding. People have decided not to put the knowledge of the stock breeder to such use, and hopefully society would be equally intelligent about the use in human genetics of any future recombinant DNA technology (the application of which is likely to be infinitely more complex).

It can be said with reasonable certainty that the results of virtually any pure scientific research have the potential for being turned against humanity. That applies, for example, even to the work our group does on the coevolution of butterflies and plants. If recombinant DNA research is ended because it could be used for evil instead of good, then all of science will stand similarly indicted, and basic research may have to cease. If it makes that decision, humanity will have to be prepared to forego the benefits of science, a cost that would be high indeed in an overpopulated world utterly dependent on sophisticated technology for any real hope of transitioning to a "sustainable society."

But even if an attempt were made to control some kinds of investigations directly, recombinant DNA research would be a peculiarly bad target for regulatory legislation and legal intervention. Workers in the field are now highly sensitized to possible dangers, are under careful scrutiny, and are funded by an agency that has already promulgated relatively restrictive guidelines on the research that can be done. Many other fields of research present greater hazards, promise fewer benefits, are populated by less responsible scientists, and would make better "test cases" for regulation. The genetic researchers who behaved responsibly are now paying a high price for their responsibility. They are being restrained from research that has considerable potential for benefitting the public. Of special interest to environmentalists and the FOE board is the work of Bruce Ames at Berkeley in developing tester strains of *Salmonella*, which are used in screening the products of the prolific synthetic organic chemical industry for carcinogens. Those of you who are familiar with it undoubtedly recognize that the "Ames screen" is the single most powerful technical tool that has been handed to environmentalists in decades. And yet Ames' research is being hindered by a complete – and pointless – ban on all recombinant DNA research

with *Salmonella*. FOE is thus in the position of helping to block work on the most promising techniques for detecting environmental carcinogens.

Perhaps the most serious threat to recombinant DNA research is the FOE suit against the NIH. If it prevents NIH funding, it would effectively shut down all university research in molecular genetics in this country, closing the laboratories of our most competent and responsible geneticists. At the moment FOE is even blocking attempts to get further information on any potential risks of technology.

Certainly, FOE should maintain its interest in the general question of how science and society interface, but I think its position on recombinant DNA research is the result of overreaction rather than careful analysis of the difficult issues involved. I hope the whole question will be reexamined by the board and that you will get some input from scientists involved in the research. I think that I could persuade Paul Berg to meet with you. As you may recall, he was one of the original "whistle-blowers." You would find him a sympathetic and humane scientist who can give a well balanced presentation of the potential risks and benefits of recombinant DNA research.

Thank you for your attention,

Sincerely,

Paul R. Ehrlich

FOE's reply to Ehrlich was quite long and technical. It said in part:

December 2, 1977

Dr. Paul Ehrlich
Biology Department
Stanford University
Palo Alto, California 94305

Dear Dr. Ehrlich:

. . . FOE's position has not encompassed condemnation or discontinuance of this type of research per se. Rather, we have called for a "stop-to-think pause" to permit a systematic assessment of the possible benefits and of the risks relating to public health and the environment, and to gain effective public participation before widespread proliferation of the research. In addition, there are broader issues which need to be addressed: (1) commercial uses and patenting of life forms; (2) professional and governmental conflicts-of-interest; and (3) the social and ethical implications of genetic manipulation.

Development of recombinant DNA research has many striking parallels to the nuclear energy controversy. They both have been permeated by the assumptions that the work will go ahead; that the benefits outweigh the risks; that we can act now and learn later; and that any given problem has a solution. But the nuclear energy industry is foundering today because it was built on technological hopes and expectations rather than on technical solutions. FOE is concerned that premature development of recombinant research and its commercial application could well propel us, irreversibly, into a similar technological quagmire. We have the unique opportunity, now, before the intellectual and economic investment grows much greater, to assess the foregoing problems.

As you indicate in your letter, the genetic researchers who first called for a voluntary moratorium on certain types of recombinant DNA research did indeed perform an invaluable service. However, this new technology entails responsibilities beyond the initial call for caution, which are seemingly not yet recognized by these scientists and their colleagues. Among these responsibilities are the fulfillment of legal obligations, which are designed to protect public health and the environment, such as compliance with the National Environmental Policy Act (NEPA).

NEPA, which requires a detailed environmental impact statement, ensures that major federal projects are not undertaken *before* assessment of risks and possible benefits, exploration of alternatives, study of environmental impacts, full disclosure of the basis for action, and an opportunity for effective public participation in the decision-making process. NEPA litigation has been used effectively in other areas, such as nuclear energy, resulting in consideration of previously ignored problems. Cases in point are *SIPI v. AEC* and *Calvert Cliffs*. Preparation of impact statements have often led to beneficial modifications of projects.

Unfortunately, the NIH's violations of NEPA with respect to the funding of recombinant DNA activities and the development of guidelines have been flagrant and ongoing. The NIH has conceded that NEPA applies to the research guidelines which purportedly safeguard against hazards. Nevertheless, a draft impact statement on the guidelines was not prepared until two months *after* the guidelines were promulgated. It contained many glaring inadequacies, and was obviously not considered during the decision-making process. Only now, more than a year later, has a final impact statement belatedly been completed. Further compounding blatant disregard for the law, *revised* weakened guidelines were developed early this year and approved by the Recombinant DNA Advisory Committee in June. The revisions are now moving through further stages of the agency review process, even though an impact statement has not been prepared and the final statement on the *original* guidelines has only just come out.

The fundamental action that is subject to NEPA is the funding of the research, not the development of safeguards or guidelines. It is the research and its applications from which will come the environmental impacts, and each project poses its unique problems. Of course, some projects may be relatively harmless, but that must be determined in the NEPA process.

The New York State Attorney General has stated that "Issuance of an impact statement after grants have been made to conduct recombinant DNA research and after publication of guidelines was a *per se* violation of the National Environmental Policy Act."

The NIH has created an adversary climate by failing

to comply with NEPA, thus compelling Friends of the Earth to turn to the courts. Although we are forced to seek injunctive relief against recombinant DNA projects and the guidelines, the ultimate goal of this litigation is to place decision-making on recombinant DNA activities on a solid base and gain effective public participation. . . .

In the past several months there has been an effort to convince the public that the risks of recombinant DNA research are lower than previously thought. This coincided with the effort to kill legislation and promulgate relaxed guidelines. The claim that the risks are less than thought earlier is based primarily on the Falmouth Workshop on Risk Assessment, a letter from Roy Curtiss III, and a paper by Stanley Cohen. The new data which has come to light is mostly unpublished, meager, and limited to a consideration of the possibility of rendering E. coli K-12 pathogenic and the likelihood of plasmic transfer to other species. Although there is not much fear of E. coli K-12 becoming a pathogen, there is considerable concern over the transfer of genes to wild E. coli strains and other species. The Curtiss letter cites unpublished data showing a low probability of the transfer of non-conjugative plasmids. These numbers are reminiscent of those used in the nuclear debate regarding improbable events which have in fact occurred. It was the consensus at the Falmouth workshop, at which the Curtiss data was discussed, that more experiments are necessary to assess the likelihood of inadvertent transfer of recombinant DNA from E. coli K-12. . . .

The Stanley Cohen article has been circulated prior to publication, contrary to usual scientific canon, in order to accelerate its consideration in the formation of public policy. His conclusion that artificial recombinational events performed in the laboratory also occur in nature has been sharply criticized by scientific peers. . . .

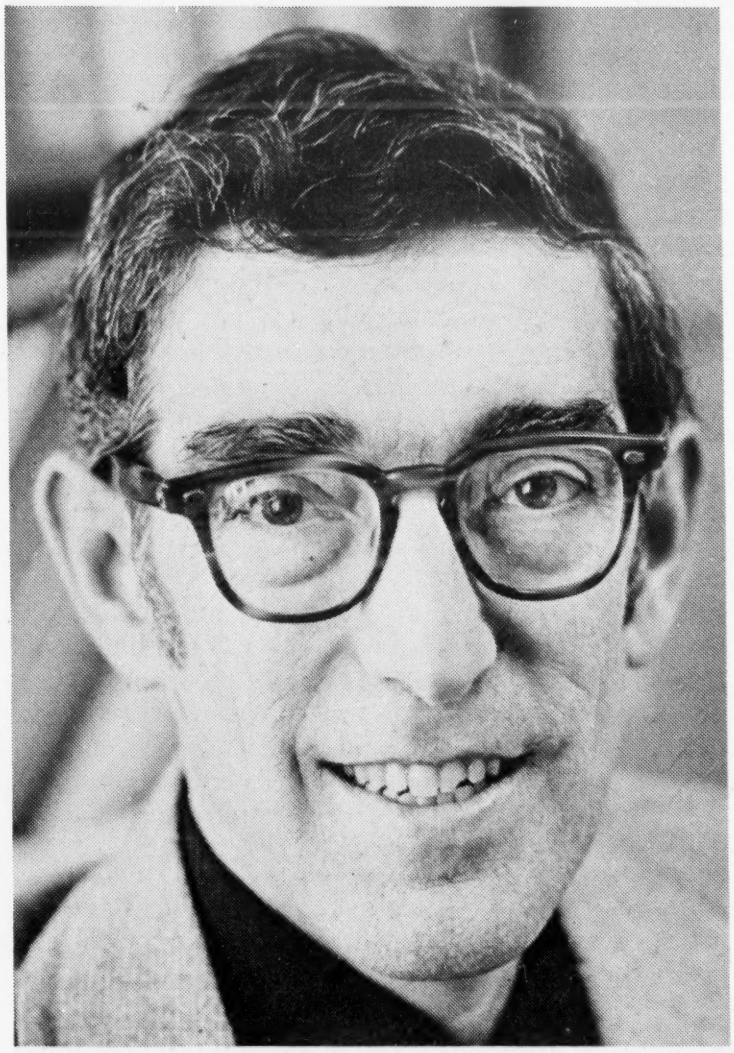
The controversy over recombinant DNA research has not diminished. We are receiving a stream of comments from scientists who not only believe that there is insufficient evidence to relax the guidelines, but that the original guidelines were based on arbitrary assumptions. Compliance by the NIH with NEPA would bring into public focus the many unresolved concerns of this controversy, and help shape responsible public policy.

Regarding your suggestion that Paul Berg meet with the FOE executive committee, we do not believe that he would offer a balanced presentation. He has been an outspoken proponent of the research. However, we would both be happy to speak to him. An exchange of views may clarify our respective concerns and initiate a fruitful dialogue.

We hope this letter has explained the position of Friends of the Earth regarding the recombinant DNA controversy.

Very sincerely yours,

Francine R. Simring
Richard M. Hartzman, Esq.



Bruce Ames

The FOE letter did not address the question of Bruce Ames' research. Here is an understated summary of the astonishing work that has come from his lab.

Environmental Mutagens/Carcinogens

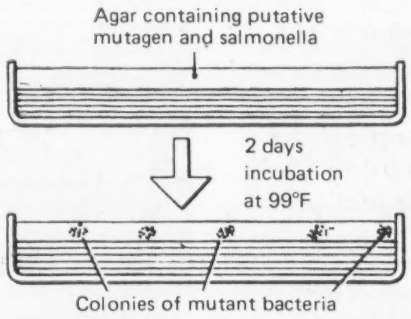
by Bruce N. Ames

Biochemistry Department
University of California
Berkeley, California 94720

It seems likely that the major part of human cancer and genetic defects arises from damage to DNA by environmental mutagens/carcinogens, which may contribute in a significant way to aging and heart disease as well. There are mutagens (both natural and man-made) in our diet, in the large number of industrial chemicals to which we are exposed, in hair dyes, in cigarettes, in our drinking water, and in the air we breathe.

It seems clear that many more chemicals will be added to the list of human carcinogens, as since the late 1950's we have been exposed to a flood of chemicals that were not tested before use for carcinogenicity or mutagenicity, from flame retardants in our children's pajamas to pesticides accumulating in our body fat. In the past this problem has been largely ignored and even very large volume chemicals, involving extensive human exposure, have been produced for decades without adequate carcinogenicity or mutagenicity tests, e.g. vinyl chloride (5 billion lbs/yr., U.S.A.) and ethylene dichloride (8 billion lbs/yr., U.S.A.),

and a host of pesticides. A small fraction of these chemicals is now being tested in animals, but for the vast bulk of them the only experimental animals still are humans, and epidemiological studies on humans are impractical in most cases. As the 20 to 30 year lag time for chemical carcinogenesis in humans is almost over a steep increase in human cancer may be the outcome if too many of the thousands of new chemicals to which humans have been exposed turn out to be powerful mutagens and carcinogens. We must identify these agents, in order to minimize human exposure, but existing animal bioassays (and human epidemiology) alone are inadequate because of expense, time, and the difficulty of dealing with the complex mixtures to which we are exposed.



The simple steps in the Ames test for mutagens/carcinogens.

Over the last 13 years we have developed a simple, sensitive, inexpensive, rapid, *in vitro* method for identifying chemical mutagens and we have shown that almost all chemical carcinogens are mutagens.[1] This test combines on a petri plate special strains of bacteria (as indicators of reverse mutation) and mammalian liver homogenates (rodent or human autopsy) (to provide mammalian metabolism). We[2-4] have validated the test for detection of carcinogens as mutagens by testing over 300 chemicals reported carcinogenic or non-carcinogenic in animal carcinogenicity experiments, and have reported that almost all chemical carcinogens tested are mutagenic in this test (157/175) and most "non-carcinogens" (95/108) are negative. Thus almost all carcinogens are mutagens, and the converse also appears to be true: mutagens are carcinogens with few (if any) adequately documented exceptions. A number of the "false positives" generated by this study appear to be explainable as consequences of statistical limitations of animal carcinogenicity tests.

The test is particularly useful for the detection of mutagens/carcinogens in complex mixtures (such as cigarette smoke, water, air pollution, food, and urine).[5-7] It is also useful in the development of drugs and industrial chemicals where large numbers of chemicals must be screened. Most of the major drug and chemical companies in the world are now using the test system and are starting to make economic decisions on the basis of it, e.g., DuPont has recently decided (at considerable economic loss) not to use two freons in spray cans (they are the available replacements for the freon that is damaging the ozone layer) because they were mutagens in our test.

We have recently developed a simple method for examining human urine in our test system and have shown that cigarette smokers have mutagens in their urine and non-smokers do not.[7]

We are now starting to study the problems of carcinogenic potency, human exposure to mutagenic agents, and human risk assessment. We have preliminary studies on the relation between mutagenic and carcinogenic potency. There are a number of reasons why one should not expect a very close quantitative correlation between mutagenicity in bacteria and carcinogenicity in animals. Nevertheless, there is over a million-fold range in mutagenic potency in the *Salmonella* test and a similar range in carcinogenic potency and even a rough quantitative correlation would be very useful in human risk assessment. There is an indication, from Meselson and Russell's work, and our own (with C. Sawyer, N.K. Hooper and A. Friedman), that there is a quantitative correlation, not only for carcinogens in the same chemical class, but also across a broad range of classes. Further work will show how general this correlation is. In one case so far we have made a prediction of carcinogenic potency as well as carcinogenicity on the basis of mutagenicity. The main flame retardant in children's sleepwear was shown to be a potent mutagen in our test system about a year and a half ago and we concluded that it represented a major hazard to the population and made some risk estimates.[8-9] The Consumer Product Safety Commission chose to ignore the significance of mutagenicity and they have been proved wrong by recent results showing this flame retardant is in fact a strong carcinogen of about the potency we predicted.

We believe that a major area of public health can best be attacked by prevention: identifying environmental mutagens/carcinogens, making a rough estimate of human risk based on potency and amount of human exposure, and minimizing human exposure to the more dangerous of these agents. It seems likely that we will soon know how dearly we will have to pay in increased cancer and birth defects for the modern world of industrial chemicals, pesticides, food additives, and plastics. It appears likely however, that the new methods and discoveries from basic biology that have been developed over the last decade and that are being developed at present will help in making future decisions more rational. ■

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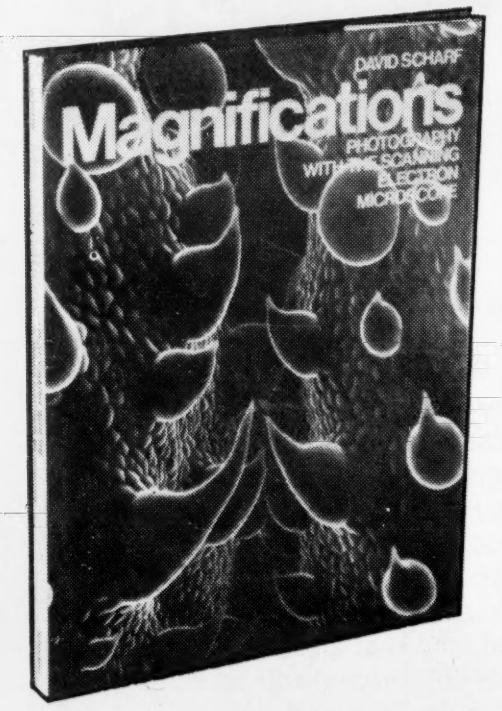
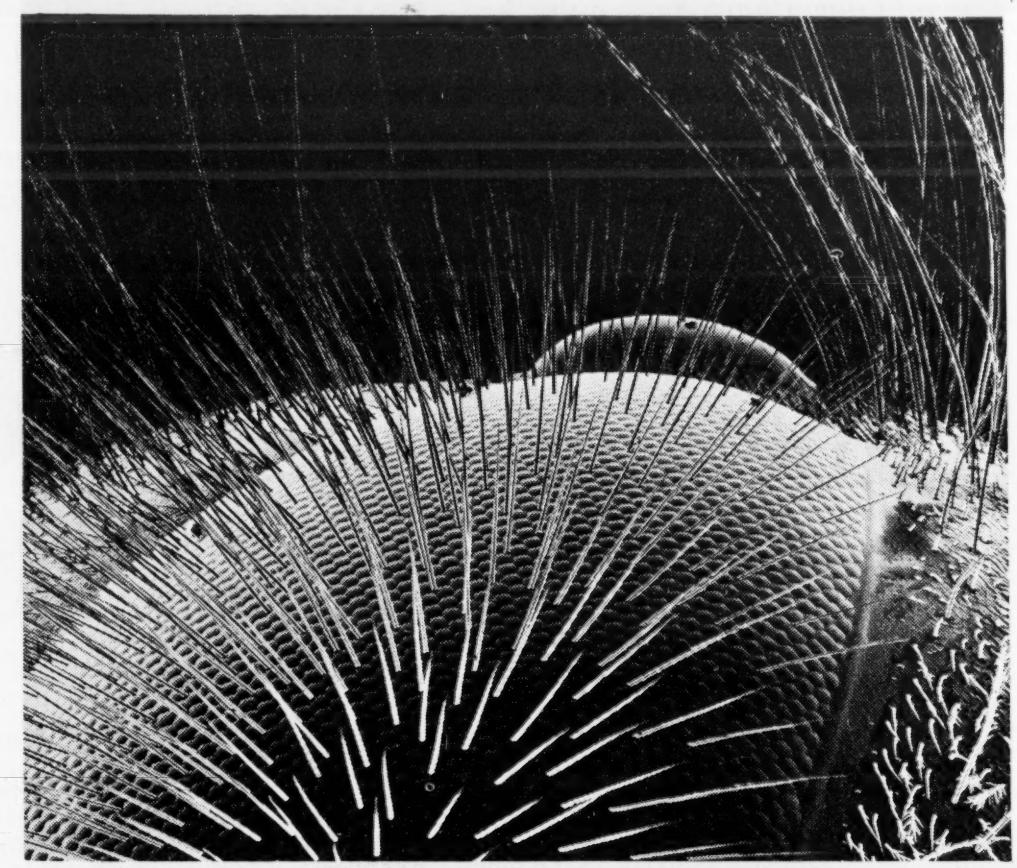
Understanding Whole Systems

Magnifications

Photographs as beautiful as any by Ansel Adams or Elliot Porter. The eye is that of a gentle man with a good sense of humor who has mastered a new tool: the electron scanning microscope. Not satellite perspective (too far away). Not x-ray crystallography (which abandons my sense of life for the mineral lattice). Just right . . . the eye travels from familiar, everyday life into the expansive detail of marijuana resin droplets, feathery thrips, gold-coated aspirin, pollen grains and gladiola petals.

—Peter Warshall





Honeybee's compound eye. Note ocellus (simple eye) in background.

280 x

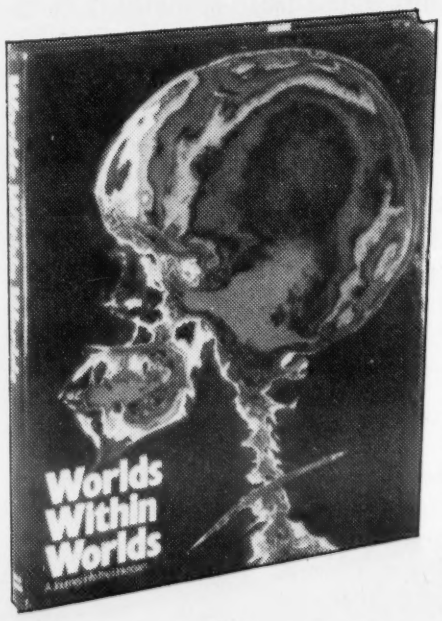
Magnifications
(Photography with the Scanning Electron Microscope)
David Scharf
1977; 119 pp.
$24.95 postpaid

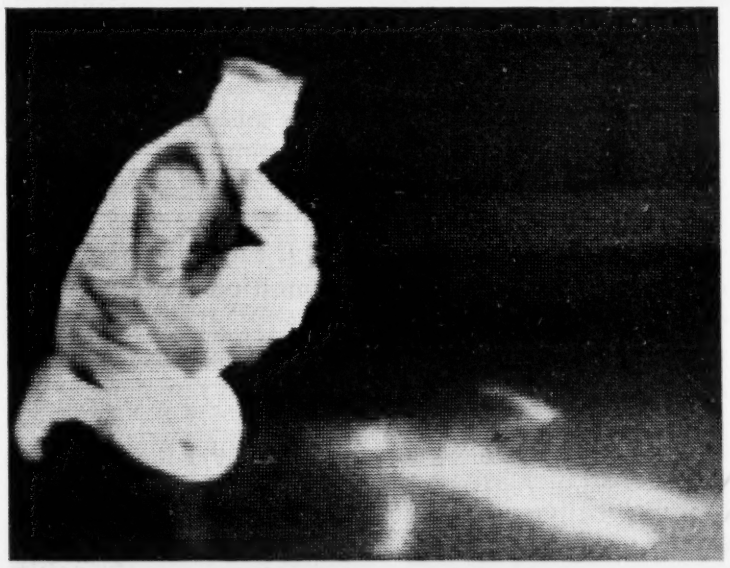
from:
Schocken Books
200 Madison Ave.
New York, NY 10016
or Whole Earth

Worlds Within Worlds

A catalog of all the new "photographic" techniques and projects happening on and off Earth. Holograms, neutrography, Kirlian photography, x-ray, field emission microscope, sonography, false color, infra-red and ultra-violet, the linescan, weather radar . . . to name just a few. Each technique is explained and a "classic" example of the technique portrayed. Some photos are amazing; some ho-hum. A basic text to the state-of-the-art.

—Peter Warshall





This picture illustrates the uses of infrared photography in police work. Though the murder victim's body is gone, thermography reconstructs its position from the heat it left on the floor. The policeman sees only a rug; the thermogram sees the heat image of a corpse.

World Within Worlds
Michael Marten, John Chesterman, et al
1977; 208 pp.
$7.95 postpaid

from:
Holt, Rinehart & Winston
383 Madison Avenue
New York, NY 10017
or Whole Earth

This article, which apparently is on acne, was written because of my interest in why people get cancer. It took me seven years to get it published, and if I had made it about cancer it would never have been published. For those who can read between the lines, it will tell you how to keep yourself from getting cancer, or, if you have it, how to contribute to your own recovery.

Originally I was interested in why people get "physical" illnesses, but now after eight years in psychiatry it is becoming obvious to me that exactly the same mechanisms are responsible for so-called "mental illness," whether trivial or catastrophic.

– W.C. Ellerbroek, 1978

Language, Thought, & Disease

by W. C. Ellerbroek, M.D.

Illustrated by David Sibbet

First listen, my friend, and then you may shriek and bluster.
ARISTOPHANES

Discovery consists of seeing what everybody has seen, and thinking what nobody has thought.
ALBERT SZENT-GYÖRGI

Alas, after a certain age every man is responsible for his face.
ALBERT CAMUS

I. INTRODUCTION

WHEN WE START to study a biological event or process with what we allege to be a 'scientific' attitude, we at first seem to see our subject dissolving into neatly definable factors and obvious solutions. If we stop here, we feel quite brilliant: if we hesitate and look more closely, all is confusion. One of our science-fiction writers said it well: "I have yet to see any problem, however complicated, which when you looked at it in the right way did not become still more complicated" [1, p. 59]. If we pursue the problem further, we discover that each element is part of a system and participates in multiple systems, that each of these systems interracts with all the others, that circularity of process is typical, and that the application of nice, tight logic leads us nowhere.

Since human beings usually try to reduce ambiguity rather than increase it, we rarely see that such study is additionally complicated by filtering through an observer whose partial perceptions and verbal machinations are as much a part of the 'field' as is the subject. (*Field* as a biological term is gradually maturing: it is little more comfortable than Dewey's "cosmos" [2], but is related to the *field* of physics only by analogy.) We may consider the observer's ability to observe as modified by the sum of his experiences since conception, his genetic background, his culture, his language, his education, and his profession, and by an infinity of other unidentified factors. When the observer is a physician, we can pragmatically predict that an internist will act and think as internists do, that a surgeon will tend to make diagnoses involving bloodshed, and that a general practitioner will do justice to his untarnished role as a slightly paranoid Atlas of the medical world.

Although I was a general surgeon at the time this work was done, I tried to avoid 'thinking like a surgeon,' and spent much time reading nonmedical subjects. I learned that major breakthroughs are often made by someone far from his own domain and that attention should be paid to the criticisms and comments of those *not* qualified to speak as experts; since they lack *la déformation professionelle*, they at least may remain able to see errors in basic assumptions. (Experts on violence just *might* learn something from child psychologists!) I gained much from the intellectual giants of the past, as well as from the interdisciplinary workers of today. When I tried to discuss such matters with my professional associates, I found that few clinicians in private practice find the time or develop the inclination to familiarize themselves with the works of those whose names often grace these and other pages. I also learned that few physicians were aware of the relevance of such studies

Dr. Ellerbroek was a general surgeon for 19 years. At present he is a staff psychiatrist at Metropolitan State Hospital in Los Angeles (and notes that the California State Department of Health is not responsible for the opinions in this article). If you want to write the author, he can be reached at Box 367, Sunset Beach, CA 90742.

The article first appeared, in longer and more technical form, in **Perspectives in Biology and Medicine**, *Vol. 16, No. 2, Winter 1973, and is reprinted here by permission of The University of Chicago Press. In June, 1976, it was printed in the present form in* **ETC.** *(a Review of General Semantics), Vol. 33, No. 2. We're third, and I'll bet it gets reprinted further.* –SB

(Grinker, Koestler, Korzybski, von Bertalanffy, Rapaport, Dubos, and Szent-Györgi are a few examples) in their day-to-day work with their patients. When I urged personal friends to read an item outside their field, they made it clear that they were already sinking rapidly in a sea of 'contributions to the literature' (few of which make large waves), so I could not blame them for disinterest in the advances in neuroscience and behavioral science which are rapidly diminishing the gray areas separating mind, brain, and body.

I found two areas of special interest: psycholinguistics and psychosomatic medicine; in addition, I learned that epistemology was of the utmost importance, instead of being a harmless hobby for the elderly. To my regret, however, I found that psychologists pretending to be linguists still seemed to me to be singing the songs that psychologists sing, and that linguists by any other name were still linguists under the skin. Similarly, it appeared to me that the experts in psychosomatic medicine were tenaciously adhering to the mind/body dichotomy while vehemently denying the existence of such a split: our old friend "It's all in your mind" had not disappeared but was still with us under an attractive new pseudonym, 'psychosomatic.' For example, "Patients with emotional illnesses are quite capable of having or acquiring concomitant somatic disease" [3]. They thus all too often, while alleging holism and while endorsing the concept that there are no such things as diseases but only sick people, perpetuate the idea that 'psychological' and 'functional' diseases are primarily 'mental' problems.

I made a valiant personal attempt to avoid the perceptual/cognitive and conceptual traps I identified; this resulted in my developing a personal theory of human behavior, including 'disease.' I have found this theory to be operationally valid, and present it here with its application to a so-called clinical entity, acne vulgaris. The utility of the theory can be demonstrated with ease, for it offers insights clarifying the numerous situations now labeled psychosomatic, as well as those called 'strictly organic,' psychiatric, or psychological. Although what follows may resemble metaphysics, I am quite aware of the usual criteria for scientific validity. Also, I heartily concur with Polanyi [4] that scientific objectivity is always to some degree a myth and, all too frequently, a delusion (it is rarely noted that 'scientific' errors are often so exquisitely constructed and so firmly buttressed as to be extremely difficult to detect). I include no such items as 'controls' and suggest that 'controls' may beneficially be specified as individuals or groups unrealistically labeled by an investigator as the 'same' as certain other individuals or groups rather than as unique individuals with various similarities and differences. My approach is anecdotal, and my observations are based upon my subjective impressions.

II. THE THEORY

Everything that happens, happens as it should, and if you observe carefully, you will find this to be so.

MARCUS AURELIUS

Postulates

1. We will temporarily, or if possible permanently, delete from our vocabulary such words as physical, mental, organic, psychological, psychic, physiological, psychosomatic, and somatopsychic, to avoid verbally dissecting the human being into artificial segments.

2. We then *try* to see the human being in his field situation, including his family and friends, his genetic data, his cumulative behaviors and experiences *since conception*, and his immediate and remote environments.

3. We will not limit the field, but will remain aware that it includes the entire cosmos.

4. We will constantly remind ourselves that our observations are subjective data, and are not to be confused with 'fact.' (In my opinion, *fact* is the most dangerous word in the English language, and is second only to *know* in the amount of error it introduces into our

thinking. It is more dangerous than *know* because of the emphasis on closure, with its implication that a verbal statement is totally valid, for all observers, now, in the past, and in perpetuity. Like all words, it can be so specified as to give it semantic validity, but since speakers fail to hold to the specifications, it is safer to believe that there is no such thing as a *fact* in this universe. When *fact* and *know* are deleted, we tend to make statements which audibly identify themselves as opinions, of some degree of probability. Although *not know* has semantic validity, our tendency to think in polar terms would promptly bring back *know* (if there is such a thing as *not knowing*, there must be such a thing as *knowing*. Human beings want ambiguity reduced; when this cannot be done, they make up words which make it appear to them that ambiguity has been eliminated.)

5. We will note all the variables on which we have any information and will avoid labeling one or more as 'salient' or 'more important,' without noting that this introduces a value judgment as an additional possible error. We will, in listing these variables, add at the end "and an infinity of other factors on which we have little or no information, as well as those of whose existence we have not dreamed." (An example is the reported relationship between barometric pressure and the suicide rate [5]; it appears unlikely that a suicidal man would include this in the factors operant in his decision.)

6. We will remember that the field includes the observer – in this case the physician – whose effects must never be ignored.

7. We will be constantly aware of our (human) desire to 'simplify,' to classify, and to split figure from ground, and will always bear in mind the fantastic complexity of the human being as a scientific subject at one instant in time. This will, perhaps, tend to eliminate such *drivel* as speaking of 'alterations of a single variable.' This becomes easier to accept upon recalling Whitehead's "fallacy of misplaced precision."

8. We will understand that we can, by choice, apply any verbal label to our observations, instead of insisting that there is one 'right' name for each thing. In this theory, we will call each observation a variety of behavior, for example, speaking, eating, and thinking behaviors, and will also label each disease, sickness, injury, illness, or neoplasm as an additional type of behavior.

9. We will specify the human being as a perceiving/cognating/emoting organism, a part of and surrounded by 'objective reality,' composed – according to current opinion – of fields of force.

Hypotheses

1. The human being can make contact with the reality inside and outside of his body *only* by his perceptual mechanisms. *Unfortunately, there is no mechanism or technique whereby he can entirely verify the accuracy of his perceptions.*

2. Since our receptors are subject to central control, ambiguity can *never* be reduced to zero, regardless of message redundancy, channel capacity, or number of channels. (Go to a mirror, close one eye; place your little finger tip at the top of your image, and the tip of the thumb at the bottom edge of the chin of the image; then measure this against your face.)

Illnesses must be regarded as a madness of the body, indeed as *idees fixes.*

– Novalis

3. The chains of nerve impulses and their feedback in some manner create within the brain a 'picture' of what is going on, which we may call 'fantasy of reality as perceived.' *Image* might seem to be a better word than *fantasy*, but the latter has desirable connotations of error or spuriousness.

4. Only under unusual circumstances is a human being even momentarily aware of the inadequacies and subjective nature of his perceptual mechanisms and cerebral processing. When he looks at something, he thinks that he *sees* it, instead of understanding that he only *thinks* that he sees it. This hypothesis may be called the delusion of perception.

5. The human being not only has personal ideas of the way he thinks things are now, but also has ideas (constructs, fantasies) of how the past, present, and future should be or should have been structured.

6. When he becomes aware that reality as he perceives it does *not* match his fantasy, he usually neurotically, irrationally, and unrealistically wishes or demands or expects that reality forthwith be changed to match his fantasy instead of altering his fantasy to match reality as he perceives it. (*Neurotic, irrational* and *unrealistic* are used in this paper as essentially synonymous, meaning "contrary to reality," and may be further specified as indicating behavior that is contrary to survival or long-term well-being.) Since reality is rarely thus accomodating, the human being then becomes frustrated, irritated, angry, unhappy, depressed, or any other of the total spectrum of unpleasant 'emotions.'

7. *Every* unpleasant emotion is associated with either a thought, verbal or nonverbal, or a verbal statement which is contrary to reality *as perceived by the person having the emotion*.

8. These 'negative' emotional reactions, specifically determined by the associated words and behaviors, are *in every instance* harmful in some way and to some degree to the organism in that they are associated with or followed by *unnecessary* alterations from normal in various organs and systems, which then require correction by appropriate mechanisms. The summation of such alterations, particularly when they exceed certain limits, may exhaust corrective devices, with the appearance of what have been called 'disease' states.

9. Conversely, 'love,' happiness, pleasure, and 'good' feelings occur when the human being notes that reality as he perceives it is temporarily matching his fantasy.

These states are associated, remarkably enough, not only with subjective sensations of well-being but also with optimum functioning of body systems, including repair processes and the restoration of so-called normality to whatever degree is possible.

10. Human language, a product of perceptual/cognitive/affective processes, reflects the errors and distortions inherent in those processes; the language learned and used, with its inherent errors, in turn leads to additional perceptual and behavioral errors.

11. Irrational verbal behavior, so readily allowing the making of statements contrary to reality, and irrational nonverbal behaviors initiate circular feedbacks which tend toward multiple repetitions, with corresponding amplification of the harmful responses of the body and brain.

12. There is at least a possibility that education in semantics, psycholinguistics, and an epistemology based on the preceding concepts, combined with avoidance training relative to harmful nonverbal behaviors, *might* offer an approach to both the prevention and treatment of many of the problems of the human race.

The negative affective states frequently induced in professionals by the preceding at least suggest the possibility that the basic concepts have some validity. Admittedly, the theory requires a large number of reconceptualizations and, in addition, introduces a rather unique theory of 'emotion.' That this is an operational definition can be shown by the following brief anecdote. Pretend for a moment that today your wife has torn off one of the garage doors; if you repeatedly say, in an appropriate tone, "She shouldn't have done that," you will become aware of increasing tension and anger. Conversely, if you then say, "Considering everything I know about my wife, and bearing in mind that there are many factors of which I am unaware, *since the event has already occurred*, it is obvious that today is the day that my wife *should* have torn off the garage door!" you will note a prompt, definite decrease in your unpleasant emotion, as well as a simultaneous correction of the rise in your gastric acidity, serum free fatty acids, and cholesterol. The first statement is contrary to reality; the second is in strict accord with reality. Nothing about this is intended to indicate that you should be pleased about the accident, nor is there any interdiction of action on your part to prevent a recurrence; the main consideration is the avoidance of behaviors which are harmful to yourself as well as your marital rapport.

Summary of the Theory

1. The human brain in its functioning presents for the use of the organism a neural transform of the summated and analyzed input of the sensory and somatic afferents which is an image of 'reality.'

2. The failure of the human being to recognize that this image is only a mental picture, a fantasy, which corresponds to reality with varying degrees of validity due to the intrinsic ambiguity of the system leads to inappropriate behavior, verbal and otherwise, adversely affecting the quality of life as well as survival. These eventualities can be partially or totally reversed by the correction of erroneous and harmful perception/cognitions and behaviors.

III. THE APPLICATION OF THE THEORY TO ACNE VULGARIS

Therapeutics is the pouring of drugs of which one knows nothing into a patient of whom one knows less.

VOLTAIRE

Words are the most potent drug that mankind uses.

KIPLING

. . . if in grief you resolutely contort your mouth into a smile, you somehow become forthwith aware of a considerable mitigation of misery. . . .

JAMES BRANCH CABELL

It is, of course, bizarre that a general surgeon should not only become interested in but also treat acne, and a few explanatory words are in order. Although initially I was quite conventional, my increasing dissatisfaction with the results of treatment of whiplash injuries and the ubiquitous entity of chronic cervical pain – with or without tension headache – led me to an intensive study of these patients. I was quickly able to see aspects previously obscure, and found an approach which promptly improved symptoms, markedly shortened the period of disability, and decreased the cost to patients and insurers [6]. The patients with long-standing difficulties with neck pain were especially grateful and recounted in great detail their previous unsuccessful treatment programs. This strengthened my impression that the then current ideas on diagnosis and treatment were not always correct. It was always my habit to maximally improve the general status of all patients before elective surgical procedures, and my initial efforts to control acne came

> **Despise no new accident in your body, but ask opinion of it.**
>
> *– Bacon*

about in this way, with subsequent development of a comprehensive program.

Selection of the 38 patients was based on their refusal of referral to a dermatologist. Thirty-six had had varying trials of therapy of different types but no X-ray; none were then under treatment. Their ages varied from 13 to 46 years. All were estimated as being in the normal to bright-normal range of intelligence. Five patients had primarily excoriated acne, five had acne conglobata, one had severe acne keloid, and the remainder had moderately severe to severe classical acne vulgaris. The initial estimate of severity was based on an agreement of the opinion of the patient and myself.

To simplify the problems of readers rendered wordless, I note here for their use a current definition of 'quack' as one who is not qualified, who claims unusually good results, and who claims to treat according to special knowledge of basic causes.

The presence and degree of improvement were again established by agreement of the patients' opinion and my opinion. The results were pleasantly at variance with the published statement of a prominent university dermatologist: "Most physicians would be satisfied with a 50% rate of clinical improvement and patient satisfaction in a chronic, embarrassing disease that is difficult to control and impossible to cure" [7]. The following figures are astounding, to say the least, and the more so when it is realized that many of the patients had exhaustively pursued various therapeutic programs for years.

There were six therapeutic failures in patients who accepted the medical aspects of the program but who refused to change their life-style. One patient with excoriated acne was cured by a sudden divorce and was therefore dropped from the study group. One patient with acne keloid was treated for 2-1/2 years with excellent results. Thirty patients (80 percent of the total group, 94 percent if the 'failures' are excluded) were judged at least 80 percent improved in 8 weeks. At 16 weeks, 17 patients were labeled 'cures' on the basis of a clear skin; the remainder showed improvement ranging from 80 to 90 percent. Female patients in this category often showed from one to four new lesions premenstrually, which cleared within a few days after the onset of menses. It may well be significant that the six failures were all cases of *moderate* severity, who had expressed in various ways their lack of commitment and motivation – compared with the desperation with which the more severe cases regarded the possibility of help.

Although there was no formal follow-up program, contact was maintained with the majority of the patients for 4 to 8 years. A few brief recurrences or exacerbations were reported, with comments that prompt clearing was noted upon a return to the regimen.

Clinical Considerations

Acne vulgaris is extremely common in our culture, especially in adolescents and young adults. It was chosen to test the utility of theory as a clinical tool because cases are plentiful, the diagnosis readily made, and expensive tests and procedures unnecessary. In reviewing recent medical literature on acne, I found 23 papers in which the authors concurred that psychotherapy was indicated for acne, although none specified what they said or did. Some issued a funereal reassurance to the patients that the passage of time would probably ameliorate the situation. Noojin alone gave a specific suggestion in advising that an attempt be made "to prevent nagging by parents and others" [8]. A typical sample of the usual recommendations was the article on acne in **Current Therapy 1967**, with no mention of psychotherapy [9]. Only two articles mentioned the use of psychotropic drugs: SegAEL reported 13 successes and one failure in the treatment of excoriated acne [10], and Lester et al. described 50 percent improvement "in an intractable group with obvious psychosocial problems, and cases difficult to manage" [11]. The overall impression given by these authors is that acne is still considered primarily a skin disease, with any 'psychological' factors considered as secondary rather than pathogenic. A marked exception to this was Wolff's comment in 1951: "When the patients believed their highly valued but unrealistic sense of independence and individuality was being threatened or abused by an authority figure, they became angry. . . . During depressed periods there was hyposecretion. . . . When angry . . . the following hypersecretory phase was followed by typical lesions" [12].

To provide a perspective for the following sections, as well as to afford an index to usual and 'normal' medical and psychiatric thinking, a sampling may be worthwhile if only to point out the way such statements tend to produce mental closure in both author and reader. One article started out about as badly as possible: "Physiological acne, a normal accompaniment of adolescence . . ." [13]. (Comment: Why, then, do not *all* adolescents blossom out? There are many that do not, particularly among the Japanese [14], who have a much lower incidence of adolescent acne.) A book on psychosomatic dermatology states cheerfully but obliviously that "most of these patients emerge unscathed both cosmetically and psychologically" [15]. (Comment: Not one single thought or act or word fails to leave its imprint on both brain and body.)

It might well be thought that, if indeed the dermatologists were unable to see their patients clearly, psychiatrists should have been able to accomplish this. The following examples suggest that such, unfortunately, is not the case:

> . . . the group as a whole were of normal neuroticism [16].
>
> . . . in spite of the obvious relationship to environmental stress . . . it was his conclusion that these people are not *markedly* neurotic [17]. [His emphasis.]
>
> It is quite possible that an emotional problem is only coincidental with the skin disease [18].

> . . . the manipulation may be an equivalent for forbidden masturbation . . . [18]. [Comment: Shades of the 1800s!]
>
> . . . the squeezings and picking may be self punishment because of guilty feelings [18]. [Comment: Occam's razor would play havoc with this construct.]
>
> Acne vulgaris is predominantly an affliction of adolescents in whom much emotional turmoil is considered 'normal' [18]. [Comment: An irrational thought is an irrational thought, regardless of age. In the Conclusion to this paper [18], I quote an unspecified Stokes: "One cannot put beautiful skins on unhappy people." This says more than many a lengthy dissertation.]
>
> Female patients were chosen for study because if emotional factors are important then they should be highlighted *in women, as for them the skin has greater psychological significance* [19]. [My emphasis.]

There is a point to be made from the above – and not a pejorative one aimed at the writers; they think and write exactly as they should, according to the world-view they were taught and the constraints of the language they acquired. The names that we call things have a great deal to do with the way we see those things: this is a crude statement of the Whorf-Sapir theory of linguistic relativity, which, since most linguists disapprove of it, may well have considerable value. We, as human beings, have long been noted to have a tendency to believe that our personal name for a thing is the 'right' name. Although this appears on the surface to be a fairly harmless behavior, it is not, since it tends to produce closure. For example, we doctors seem to have a predilection for nouns in naming diseases, for example, epilepsy, measles, brain tumors, and because these conditions 'deserve' nouns as names, then obviously they are *things* – to us. The reader may find it amusing as a semantic exercise to alter these concepts by the simple expedient of changing the part of speech. If you take one of these nouns – measles – and make it into a verb, then it becomes, "Mrs. Jones, your little boy appears to be measling," which opens both your mind and her mind to the concept of disease as a process. If we consider a college girl about to take midterm examinations who has just broken off with her boyfriend and whose menses are slightly delayed, and note that she is infectious-mononucleosising (clumsy, but you get the point), you will observe that new vistas are opened strongly suggesting a depressive reaction *plus* a virus.

Back to acne. It can empirically be labeled in many ways – as a disease, a curse of the teen-ager, a dermatological problem, a communication, a ritual, a behavior: each of these labels and many others can be applied, and each allows the construction of a new hypothesis or model which then can be checked, *not for validity, but for utility.* For the purpose of this paper, acne vulgaris was *by choice* labeled as just another kind of human behavior, providing a very different perspective than when it is called a skin disease, normal (!) in adolescents.

It is common knowledge that patients with acne often pick at their lesions, which relates well to Graham's statement of attitude in acne as a feeling of being picked on or nagged at, and wishing to be left alone [20]. In everyday speech this is, "Stop picking on me! Leave me alone!" This correlated well with my observations of itching and scratching as behavioral phenomena. It was, and still is, my habit to watch patients *very* closely both during the consultation and the examination. In a series of new patient examinations (*not* acne patients), I noted, as undoubtedly many others have, that when I was discussing unpleasant matters with a patient often his hand would go to his face, chest, leg, or opposite arm, and one or more fingernails would scratch for a moment while he was searching for words. I began to watch for this response while deliberately stressing patients, and was amazed to see the constancy with which this bit of behavior was produced. In addition, I became aware that, as far as I could tell, every time *I* felt picked on, *I itched!* (I am imagining that dermatologists or psychiatrists who read this in the future may find one of their fingers rubbing a rib or scratching their neck, or one of their nails gently massaging a small area of folliculitis – sort of an iatrogenic acne salute.) I also subjectively and introspectively noted that if the 'picked on' feeling metamorphosed promptly into a mild depressed feeling, the itching did *not* occur, and instead a typical depressive sigh was the reaction. It appeared to me that this itching behavior occurred in greater intensity and higher frequency in individuals with either active acne *or acne scars.* This exaggerated pattern was also noted, as might be expected, in patients with atopic dermatitis, neurodermatitis, seborrheic dermatitis, excoriated acne (*de jeunes filles*), and neurotic excoriations.

The only scientific (*sic*) explanation of this phenomenon of which I am aware is Cormia's report on the lowering of the threshold for itching by deliberately

induced stress [21]. Similarly, Ax, while working on the differentiation of fear and anger, observed that "even the finest nuances of psychological events may be found to have a corresponding differentiation at the physiological level" [22]. Lester et al. state, "It is significant that imipramine, an antidepressant, has also a marked effect on itching. . . . This points to the often expressed hypothesis that itching in certain cases is a depressive equivalent" [11].

From the above, the formulation for acne is as follows: (1) Acne vulgaris can be considered as merely another common human behavior rather than as a 'disease.' (2) Each patient with acne lesions should have *exactly* the clinical picture at any particular moment that he or she does have at that moment. (3) When a human being makes an irrational statement, silently or aloud, of the 'picked on' variety, itching often occurs. (4) Patients with acne vulgaris tend to express their thought patterns with remarkable consistency as feelings of being 'picked on.' Specifically, they interpret anything which they do not like as 'abuse' and as being deliberately aimed at them personally. (5) Hypothesis: If the 'picked on' thought pattern and other contributory behavior can be decreased or eliminated, the acne should improve.

Did you ever observe that there are two classes of patients in states, slaves and freemen; and the slave doctors run about and cure the slaves, or wait for them in dispensaries – practitioners of this sort never talk to their patients individually or let them talk about their own individual complaints. The slave doctor prescribes what mere experience suggests, as if he had exact knowledge, and when he has given his orders, like a tyrant, he rushes off with equal assurance to some other servant who is ill. But the other doctor, who is a freeman, attends and practices on freemen; and he carries his inquiries far back, and goes into the nature of the disorder; he enters into discourse with the patient and with his friends, and is at once getting information from the sick man and also instructing him as far as he is able, and he will not prescribe until he has at first convinced him. If one of those empirical physicians, who practice medicine without science, were to come upon the gentleman physician talking to his gentleman patient and using the language almost of philosophy, beginning at the beginning of the disease and discoursing about the whole nature of the body, he would burst into a hearty laugh – he would say what most of those who are called doctors always have at their tongues' end: Foolish fellow, he would say, you are not healing the sick man but educating him; and he does not want to be made a doctor but to get well.

– Plato

The Therapeutic Program

Each patient had a *complete* history and physical examination done by me. This included a careful review of personal problems, habits, recreations, education, social and economic situation, religious beliefs, and sexual attitudes and behaviors. The most productive single question was: "Are you happy?" Each problem was discussed, with an appropriate program for correction. A non-paranoia-producing program was outlined for any tendency toward obesity (anything in excess of 7 pounds over optimum weight, *not* over the American average). During the initial and subsequent interviews, attention was drawn to harmful language habits, depressed postures, faces, voice tones, and sighing respirations of various types. Every opportunity was taken to increase rapport, suggestion, and so-called placebo effect. Initial visits took from 60 to 90 minutes.

Patients were given detailed reasons for any medication, with specification of the anticipated benefits to maximize any possible placebo effect. Antidepressants were reserved for those with major "real" situational or personal problems, such as an alcoholic spouse, an "impossible" job, or virginal hypertrophy of the breasts. Staphylococcus toxoid (Lederle) was prescribed routinely; whether these injections were therapeutic or 'placebo,' patients improved more rapidly with it than without it. Topical medications were advised against, with the explanation that their use reinforces the erroneous idea that acne is a skin disorder, thus decreasing the attention paid to the behavioral aspects of the program.

Diet was deemphasized, with mention that excessive chocolate, nuts or greasy foods are not a help. Patients were warned to avoid constipation. Patients were advised to abstain from alcohol completely during the early stages of treatment because of its depressant effect.

Posture and facial expression were strongly emphasized. During the first office visit, the patient was repeatedly shown the immediate effect of posture on mood by having him walk, stand, and sit in various postures while attention was drawn to the subjective sensations. The patients were particularly coaxed to get their shoulders up and back, with resultant elimination of flattening or rounding in the cervical, low thoracic, and lumbar regions. It was also pointed out frequently that a pleasant facial expression and a pleasant voice, "with sentences ending with an *up* beat," were highly desirable in obtaining the best results as rapidly as possible.

Patients were urged to obtain the book **A Guide to Rational Living**, by Ellis and Harper [23], and to concentrate on the chapter on blame. Ellis presents the subject excellently, clearly, succinctly, and coherently. This book is invaluable in saving the therapist's time and also provides the patient with a ready source for repeated reference.

At a follow-up visit 2 weeks later, a complete review of the program was carried out, with analysis of typical problem situations. Further visits were scheduled every 4 to 6 weeks. A number of patients

were seen only four times but appeared later for other reasons and thus could be included in the study. All patients in the reported group had a minimum 4-year follow-up.

Patients were told, over and over again, that acne is related to feeling picked-on plus multiple other factors and that the clinical lesions will *not* develop without the picked-on feeling.

Women in active menstrual life or on cyclic supplemental estrogens (not synthetics!) were warned about the depressive equivalent inherent in the premenstrual tension syndrome and were given advice on how to minimize the problem.

Psycholinguistic Psychotherapy

Rather than merely say that I use psychotherapy, I wish not only to indicate the approach but also to give examples. It is, however, my carefully considered opinion that a therapist who wishes to try this must *first* work these ideas through carefully for himself – in his own life – and not use them in therapy until convinced of their validity and value.

1. At each interview, a statement similar to the following was included:

> Since acne is related to feeling picked-on, and if having acne on your face or body makes you feel picked on, you can easily see that this makes a problem like that of the fat lady who can't get skinny because she is so unhappy about being fat. . . . So learn to say, "That big pimple *should* be just exactly where it is," or, "My face *should* look this way today," instead of saying, "My face shouldn't look this way," because saying that will make you unhappy and keep your face from getting well.

2. The patients were advised to watch for itching as an indicator of an irrational thought as follows:

> *Every* time you itch, unless you have been sprinkled with itching powder, it is a clue to you that *immediately* before you itched – or at the same time – an "irrational" or erroneous thought went through your head. . . . You can *use* this itch as a valuable tool in watching for unhappy thoughts, for if you go back quickly and say, "What was I thinking before I itched – oh yes, that the professor *shouldn't* have made the assignment that long." So right away, reverse that thought and say aloud or silently, "Nonsense! The assignment should be just *exactly* as long as it is!" Every time you do this process correctly, you are one more step on the road to having a clear skin.

Similar instructions were given relative to the 'sigh,' since human beings tend toward this easily recognized depressive reaction when they give up the right to feel hostile and angry.

3. An attempt was made to teach the patient to avoid the feedback from words with depressive connotations, such as *pain, hurt, mad, bad,* etc., by deleting the pejorative word and reversing the sentence. "I feel miserable" thus becomes "I certainly don't feel as chipper as I'd like to."

4. Patients were told that no human being can perform *any* act without wanting to, and the inevitable replies and challenges to this observation were met until they got the idea. Difficulties with this seemed to be proportional to education: noncollege patients grasped quickly the lack of importance of the 'rightness' or 'wrongness' of a statement, as compared with its potential harmfulness. They then were given a list of the words *should, must, have to, ought to, got to,* and *willpower* and were urged to eliminate these from their vocabularies in statements made by themselves about themselves. It was pointed out that each of these words has the implication that we are in some way being forced to perform an act which, in actuality, we are performing *because we want to*, but that when we use these words they give us a 'controlled' feeling, which then allows us the exquisite but harmful bliss of self-pity. They were advised to routinely substitute the phrase "I want to." The typical example was, "I've got to go to work." The correction was, "Oh no, you don't. You could go fishing *if you really wanted to*, but if you *do* go to work, no matter what you tell yourself, you are going because you want to go!"

5. A verbatim extract of a tape recording made, with the patient's knowledge and consent, during treatment of a 25-year-old R.N. with persistent acne since adolescence is presented as an example.

> THERAPIST: Now pretend that you are passing medications, and the charge nurse says you are doing everything all wrong, and you say – inside your head – "She shouldn't be treating me that way." *That's* irrational. In other words, whatever *does* happen, there are reasons – even though you may not know what the reasons may be. As soon as you change this around and say, "Now wait a minute, if she *did* it, there's some reason why she did, and therefore in this particular universe at this particular time, it was inevitable that Miss So-and-so was going to say just *exactly* what she did." Then you won't feel picked-on, although what happened and how you saw it are unchanged. In other words, it isn't what happens that bugs you, it's the things that you say in your head *about* what happens that makes all the machinery get messed up and leads to various varieties of disease. [N.B.: Epictetus, in his *Discourses*, was possibly the first rationalist to point this out.]
>
> PATIENT: O.K. I'll try to remember that. But this is going against my thinking!
>
> THERAPIST: Right! And this is what we are trying to do – go against your thinking, and make it go a different way.

[more →]

The following is an almost verbatim transcription from a discharge visit:

> THERAPIST: Always remember that your brain is patterned by *everything* that happens throughout your life, even back to the moment you were conceived. So all the years you were thinking picked-on thoughts, your brain was recording these. Since we all tend to continue doing whatever we do, it becomes obvious that learning a new process of thinking is not an easy or trivial thing to do. You will find that it requires constant supervision for a minimum of about 2 years. If you stop paying attention to it sooner, and many do, it is quite possible that your acne will come back, and you'll have to start all over again. After 2 years of practice, you can relax a little, but don't forget that as long as you live, when life goes against you, your brain will tend to pop back into your original behavior pattern – feeling picked on again. As soon as you notice this, yank yourself back into the right way of thinking immediately and, if necessarily, temporarily go back to the Stelazine and the injections. Of course, this may not happen at all, but if it does, you'll find it quite simple to get yourself back on the right road.

IV. CONCLUSION

There is little doubt in my mind about the number and variety of negative reactions this paper will provoke. However, whether critics speak of faith healing, hypnotism, suggestion, or placebo effect, the results might still arouse some interest. My fullest cooperation is offered to those who wish to make clinical trials, but for a 'fair' test, it should be noted that the essentials are an enthusiastic therapist who does not fear intense involvement with his patients and who will go to great lengths to help them, as well as patients who have been thoroughly convinced of the earnestness and capabilities of their physician and of the results that it is possible to achieve.

Finally, note that this paper is *not* about acne vulgaris: it is about how people get 'sick' and how they get 'well.' If this admittedly controversial approach has a major value, it is in the demonstration that Graham's study of 'attitudes' came very close to solving the problem of psychosomatic specificity [20]. My own idea is that a 'disease' is determined by *all* the specific psycholinguistic and behavioral events in the life history of the patient, including his total interaction with this field within and without. There are those who will say that such an explanation explains nothing. But it appears to me as the only rational explanation of human behavior, including 'disease,' and that – since postures, voices, behaviors, words, and thoughts are all modifiable variables – there is therefore no such thing as an untreatable disease.

After many years in surgery, and now in psychiatry, I still have the same goal: not the treatment of acne, but the elucidation of mechanisms of disease, both 'mental' and 'physical.' It is my carefully considered opinion, mad as it may sound, that this mechanism – ubiquitous in human beings – is the long-sought-for hidden factor behind major system malignancies, and that the road to cancer control *and prevention* is open to us now.

The message is: Don't be depressed – why get cancer? ■

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...AND NOW, FOLKS, INTRODUCING, FOR THE FIRST TIME IN ANY MAGAZINE, A WHOLE NEW SET OF CHARACTERS FROM THE CREATOR OF SO MANY OF YOUR FAVORITE CARTOON CHARACTERS, THOSE LOVABLE... THOSE CUTE 'N' CUDDLY... THOSE SIMPLY ADORABLE LI'L GUYS....

THE NERDS*
NO FUSS! NO MUSS!
THEY'RE BOUND TO BE A HIT!
T.M.
©1978 R. CRUMB
HEY, YA OL' STU-BUM, WHAT'RE YA UP TO, ANY-WAY??
I AIN'T NO STU-BUM! WOTCH WHUT Y' SAY, FRIEND... I BEEN CONTEMPLATIN' EXIS-TENSE 'N' IT AIN'T T' BE TAKEN LITELY!
YA GET ME??
WHERE'S MY FISH?
IYIYI..
DON'T GET UPSET!! WHEN I CALL YOU A STU-BUM, IT'S ONLY IN FUN... I USE IT AS A TERM OF ENDEARMENT, REALLY!!
POOP!
I DON'T THINK "STU-BUM" IS A KIND THING TO CALL SOMEONE, EVEN IN JEST... IT HAS A NEGATIVE AFFECT ON TH' SUB-CONSCIOUS...
MAY GOD STRIKE ME DOWN AND CALL ME "PISHOCKS" IF I EVER UTTER THE WORD "STU-BUM" IN YOUR PRESENSE AGAIN!
GOD NOTHIN'! I'LL DO TH' JOB MYSELF! CALL ME A STU-BUM...
OH YEH? OH YEH? HEY, C'MON... LET'S HAVE AT IT!
I WOULDN'T WASTE MY TIME... SAY, LISTEN, DO YOU THINK THE MIND CAN EVER REALLY KNOW WHAT THIS IS??
NAW! NO WAY, BABE!!
THEN WHAT IS KNOWLEDGE?
KNOWLEDGE, PAL, IS AN ILLUSION! WISDOM, ON TH' OTHER HAND—
WELL, IT ONLY COMES WHEN YOU'RE READY FOR IT...
...OTHERWISE IT'S PEARLS BEFORE SWINE, KNOW'D I MEAN?
I KNOW WHUTCHA MEAN... WISDOM IS ONE OF TH' FEW THINGS LEFT THAT CAN'T BE BOUGHT 'N' SOLD!
* NOT TO BE CONFUSED WITH THE "NEBBISHES"

BUT IF KNOWLEDGE IS A FALSE ILLUSION, WHAT GOOD IS ALL THIS GRAY MATTER INSIDE OUR HEADS??

GOOD FOR GETTIN' US ALL IN A PECK O' TROUBLE, SEEMS TO ME!!

YUP, SURE DOES SEEM LIKE THAT, DOESN'T IT?

YUP, IT SURE DOES..

I GUESS IT COMES IN HANDY FOR PRACTICAL PURPOSES OF SURVIVAL ONCE IN A WHILE...

YEAH, MAYBE... I'D VENTURE TO SAY KNOWLEDGE CAN BE USEFUL IF YA CAN TAKE IT WITH A GRAIN O' SALT!

YEH, THAT'S RIGHT...YOU GOTTA BE PRACTICAL ABOUT IT!

YOU CAN'T LET TH MIND GET TOO COCKY...IT LIKES T'THINK IT KNOWS EVERYTHING!

NO LOITERING

WHERE-AS IN REALITY IT KNOWS NOTHING ABOUT THE TRUE NATURE OF THINGS!

PRECISELY... JUST ASK ANY O' THESE HARRY KRISHNAS YOU SEE DOWN HERE! THEY'LL TELL YA ALL ABOUT IT!!

THEY ALL SEEM LOONEY T' ME, BUT I CAN'T TELL...

ALL I KNOW IS, EXPERIENCING TH' SPIRIT TAKES ALOTTA SELF-DISCIPLINE!

YOU HAVE TO KEEP YER LIFE VERY SIMPLE AND—

BUT WAIT A MINUTE... LOOKA HERE..

IF THE MIND CAN'T KNOW IT, THEN HOW DO YOU EVEN KNOW TH' SPIRIT EXISTS??

HM... GOOD QUESTION...

I THINK WE JUST SOMEHOW KNOW THAT IT EXISTS...WE CAN SENSE THAT THERE'S SOMETHIN' BEHIND THIS MATERIAL WORLD THAT IS NOT OF THE MATERIAL WORLD...

MEBBE SO..

THERE SEEMS TO BE AN URGE TOWARD IT IN ALL OF US...ONLY MOST PEOPLE ARE SO CAUGHT UP IN THE WORLD THEY ARE BLIND TO IT MOST OF THE TIME...

THAT'S ME..

ME TOO... I ONLY GET RARE GLIMPSES OF IT... A FLASH NOW'N'THEN..

YEAH... IT'S A VERY PERSONAL THING... GODDAMMIT!

...AND TO REALLY MERGE WITH IT, YOU GOTTA SHOVE SO MUCH OF THIS OTHER CRAP OUTTA YOUR LIFE...YOU HAVE TO WANT IT BAD!

OH MAN... THAT'S HEAVY!

YES SIR, YOU GOTTA BE ALL THROUGH WITH MONEY, WOMEN, BOOZE, DOPE, PARTYING, FANCY CARS, EXPENSIVE JOOLERY... ALLA THAT, IF YOU WANNA BECOME ONE WITH TH' SPIRIT...

OH MAN!

FERGIT IT! I AIN'T READY!

THAT MAKES TWO OF US!

LISTEN, I GOTTA GO PICK UP MY UNEMPLOYMENT CHECK... Y'WANNA COME ALONG? I GOT MY CAR RIGHT OVER HERE...

YEH SURE... I'M FREE FOR TH' AFTERNOON.

TH' PROBLEM IS, WE'RE BORN INTA TH' WORLD OF MATTER AN' ALL WE KNOW IS MATTER...

QUITE SO... IT'S ALL JUST A BUNCH O' CHEMICALS!! ELEMENTS.. ATOMS...

WEEZE

BLAMP

BRRUM

IT'S TOUGH... WE GET CAUGHT UP IN TH' RAT RACE... TH' DUALITIES.... ALWAYS LOOKIN' TO SATISFY THE CRAVINGS OF TH' FLESH!

AY-MEN, BROTHER! AY-MEN!

Hupmobile

MAN, THIS'S AN AWFULLY BIG CAR! I KIN HARDLY SEE OVER TH' HOOD!

....I GOT IT CHEAP... GOT ALOTTA MILES ON IT...

VRUMM

// BEEP //

396 TIS

MUST BE A REAL GAS-HOG THOUGH, EH?

...AND THEN THERE'S THE LITTLE PROBLEM OF JUST TRYIN' TO SURVIVE... JUST KEEPIN' YER HEAD ABOVE WATER!

DON'T I KNOW IT! I'LL BET THIS HEAP BURNS OIL TOO, DOESNT IT?!

HEY, Y' WANNA GET OUT 'N' WALK? THAT'S ENOUGH ABOUT TH' CAR, OKAY?

...AN' HOW ABOUT THE SET-UP? EVERYBODY TAKIN' ADVANTAGE OF EVERYBODY ELSE!

IT'S DOG-EAT-DOG... YOU GOTTA GET YOURS... NOT A VERY SPIRITUAL SITUATION!

YEAH, IT'S A STINKIN' SYSTEM ALRIGHT...

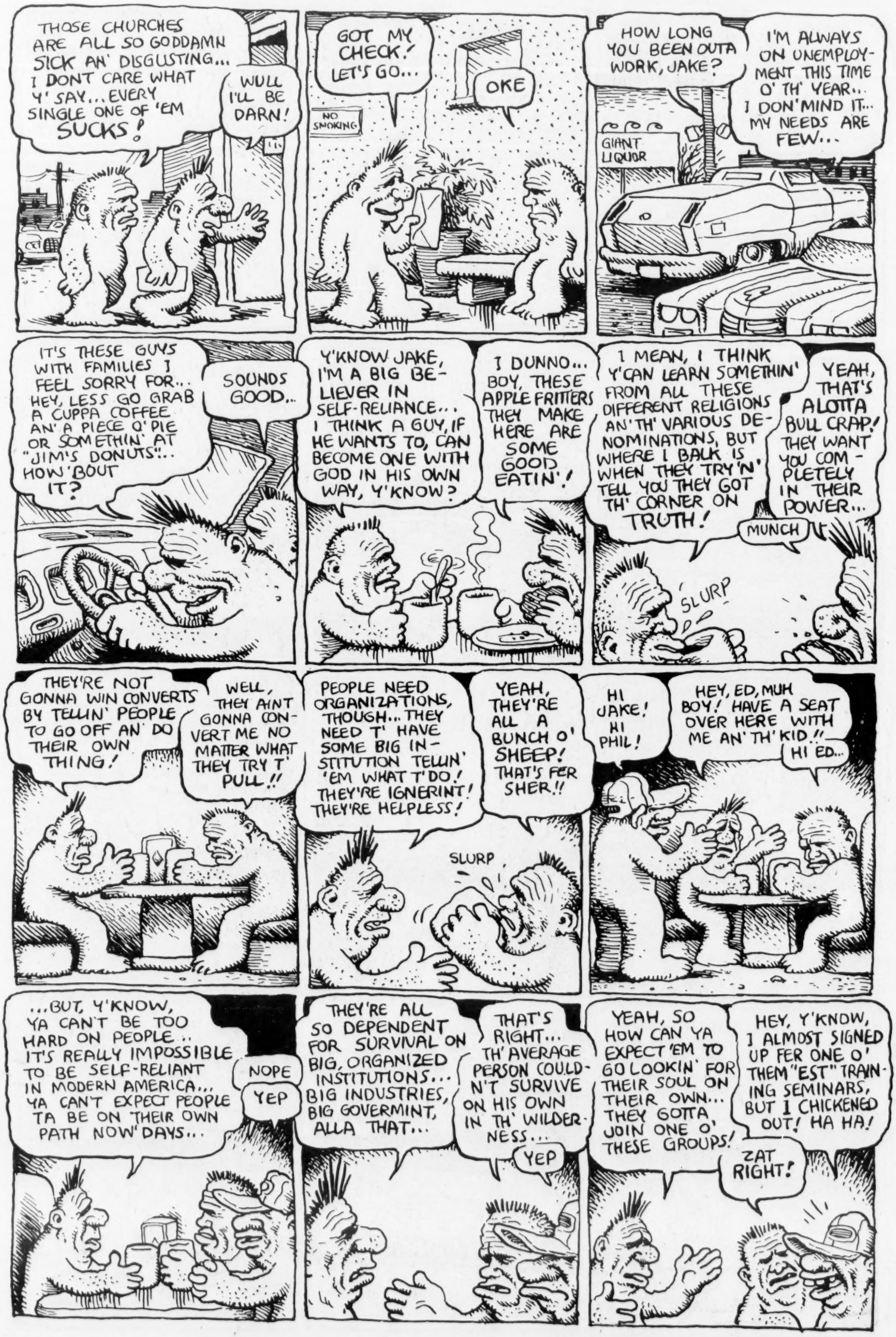
ME, I FEEL FULFILLED IF I GET TH' CHANCE T' SIT IN FRONT O' TH' T.V. WITH A BEER 'N' WATCH A BALL GAME, KNOW'D I MEAN?

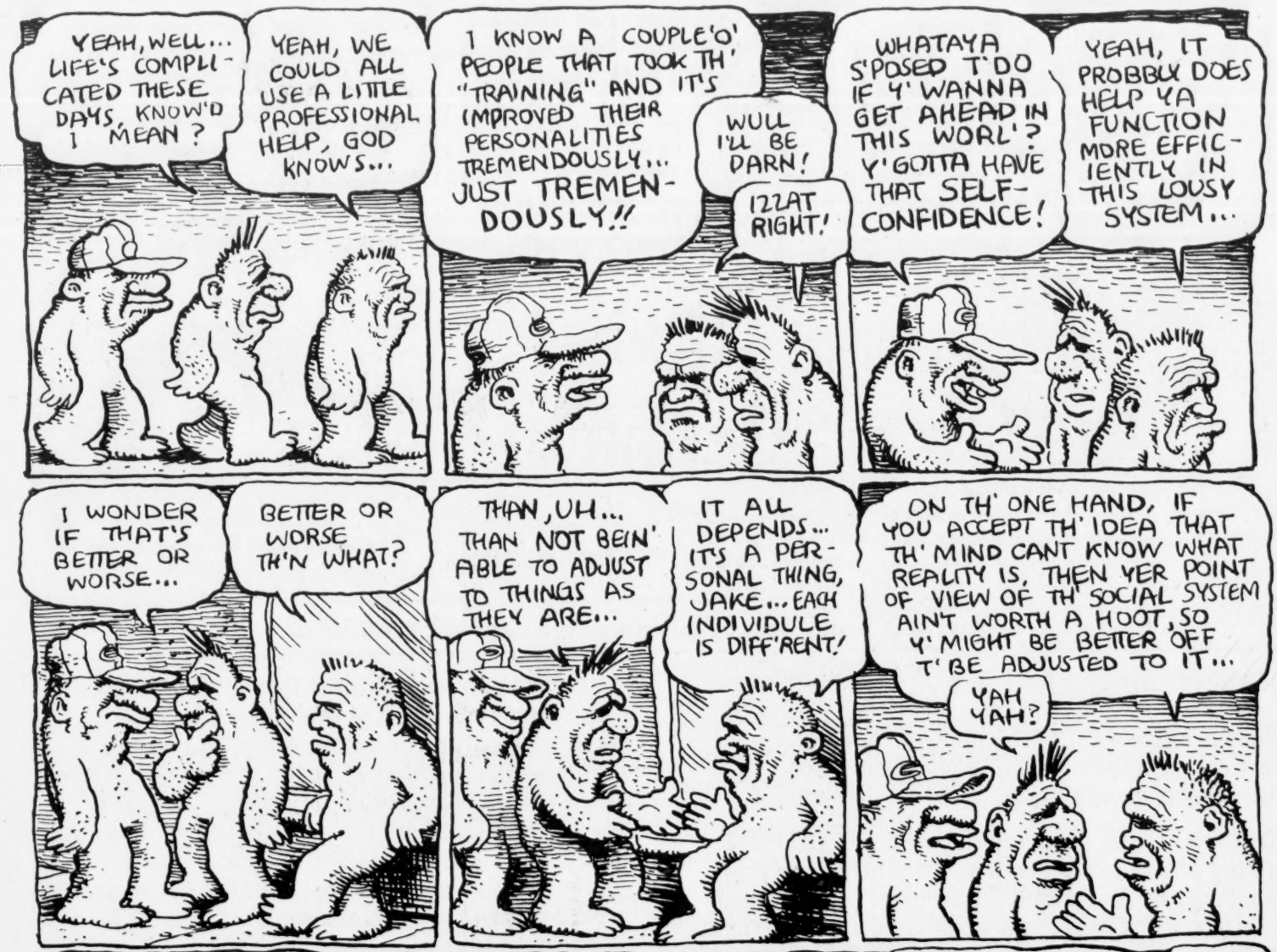
YEH, THAT THING OF SEEKIN' TH' SPIRIT GETS T' SOUNDIN' TOO MUCH LIKE RELIGION, Y'KNOW?

I HATE RELIGION... MY PEOPLE WAS CATH'LIC... I HATE TH' FUGGIN' CHURCH!

SO DO I ... THEY ALL SAY TH' SAME DAMN THING... THEIR WAY IS TH' ONLY RIGHT WAY... THEY ALL SAY THAT! AN' I OUGHTA KNOW... I'VE LOOKED AT 'EM ALL!

ZAT RIGHT?


THOSE CHURCHES ARE ALL SO GODDAMN SICK AN' DISGUSTING... I DONT CARE WHAT Y' SAY... EVERY SINGLE ONE OF 'EM SUCKS!
WELL I'LL BE DARN!
GOT MY CHECK! LET'S GO...
NO SMOKING
OKE
HOW LONG YOU BEEN OUTA WORK, JAKE?
I'M ALWAYS ON UNEMPLOYMENT THIS TIME O' TH' YEAR... I DON'MIND IT... MY NEEDS ARE FEW...
GIANT LIQUOR
IT'S THESE GUYS WITH FAMILIES I FEEL SORRY FOR... HEY, LESS GO GRAB A CUPPA COFFEE AN' A PIECE O' PIE OR SOMETHIN' AT "JIM'S DONUTS"... HOW 'BOUT IT?
SOUNDS GOOD..
Y'KNOW JAKE, I'M A BIG BELIEVER IN SELF-RELIANCE... I THINK A GUY, IF HE WANTS TO, CAN BECOME ONE WITH GOD IN HIS OWN WAY, Y'KNOW?
I DUNNO... BOY, THESE APPLE FRITTERS THEY MAKE HERE ARE SOME GOOD EATIN'!
I MEAN, I THINK Y'CAN LEARN SOMETHIN' FROM ALL THESE DIFFERENT RELIGIONS AN' TH' VARIOUS DENOMINATIONS, BUT WHERE I BALK IS WHEN THEY TRY 'N' TELL YOU THEY GOT TH' CORNER ON TRUTH!
YEAH, THAT'S ALOTTA BULL CRAP! THEY WANT YOU COMPLETELY IN THEIR POWER...
MUNCH
SLURP
THEY'RE NOT GONNA WIN CONVERTS BY TELLIN' PEOPLE TO GO OFF AN' DO THEIR OWN THING!
WELL, THEY AINT GONNA CONVERT ME NO MATTER WHAT THEY TRY T' PULL!!
PEOPLE NEED ORGANIZATIONS, THOUGH... THEY NEED T' HAVE SOME BIG INSTITUTION TELLIN' 'EM WHAT T' DO! THEY'RE IGNERINT! THEY'RE HELPLESS!
YEAH, THEY'RE ALL A BUNCH O' SHEEP! THAT'S FER SHER!!
SLURP
HI JAKE! HI PHIL!
HEY, ED, MUH BOY! HAVE A SEAT OVER HERE WITH ME AN' TH' KID!!
HI ED...
...BUT, Y'KNOW, YA CAN'T BE TOO HARD ON PEOPLE.. IT'S REALLY IMPOSSIBLE TO BE SELF-RELIANT IN MODERN AMERICA... YA CAN'T EXPECT PEOPLE TA BE ON THEIR OWN PATH NOW' DAYS...
NOPE
YEP
THEY'RE ALL SO DEPENDENT FOR SURVIVAL ON BIG, ORGANIZED INSTITUTIONS... BIG INDUSTRIES, BIG GOVERMINT, ALLA THAT...
THAT'S RIGHT... TH' AVERAGE PERSON COULDN'T SURVIVE ON HIS OWN IN TH' WILDERNESS...
YEP
YEAH, SO HOW CAN YA EXPECT 'EM TO GO LOOKIN' FOR THEIR SOUL ON THEIR OWN... THEY GOTTA JOIN ONE O' THESE GROUPS!
HEY, Y'KNOW, I ALMOST SIGNED UP FER ONE O' THEM "EST" TRAINING SEMINARS, BUT I CHICKENED OUT! HA HA!
ZAT RIGHT!


YEAH, WELL... LIFE'S COMPLI-CATED THESE DAYS, KNOW'D I MEAN?
YEAH, WE COULD ALL USE A LITTLE PROFESSIONAL HELP, GOD KNOWS...
I KNOW A COUPLE'O' PEOPLE THAT TOOK TH' "TRAINING" AND IT'S IMPROVED THEIR PERSONALITIES TREMENDOUSLY... JUST TREMEN-DOUSLY!!
WULL I'LL BE DARN!
IZZAT RIGHT!
WHATAYA S'POSED T'DO IF Y' WANNA GET AHEAD IN THIS WORL'? Y'GOTTA HAVE THAT SELF-CONFIDENCE!
YEAH, IT PROBBLY DOES HELP YA FUNCTION MORE EFFIC-IENTLY IN THIS LOUSY SYSTEM...
I WONDER IF THAT'S BETTER OR WORSE...
BETTER OR WORSE TH'N WHAT?
THAN, UH... THAN NOT BEIN' ABLE TO ADJUST TO THINGS AS THEY ARE...
IT ALL DEPENDS... IT'S A PER-SONAL THING, JAKE... EACH INDIVIDULE IS DIFF'RENT!
ON TH' ONE HAND, IF YOU ACCEPT TH' IDEA THAT TH' MIND CANT KNOW WHAT REALITY IS, THEN YER POINT OF VIEW OF TH' SOCIAL SYSTEM AIN'T WORTH A HOOT, SO Y' MIGHT BE BETTER OFF T' BE ADJUSTED TO IT...
YAH YAH?
BUT THEN AGAIN, IF YOU HAVE THIS DEEP MORAL FEELING THAT TH' SYSTEM IS WRONG, YOU PROBBLY WOULD RATHER NOT WANT TO FIT IN, EVEN IF IT MEANS BEIN' POOR AN' GETTIN' FUCKED AROUND...
YEAH, I DUNNO...
LIFE'S SO DOGGONE COMPLEX!
AIN'T IT THOUGH?! ALOTTA TIMES I THINK ABOUT GOIN' OFF AN' LIVIN' IN TH' WOODS... I'M A GREAT BELIEVER IN SELF-RELIANCE, Y' KNOW...
THAT THERE'S A PIPE DREAM, PHIL... YOU'LL NEVER DO IT 'N' YOU KNOW IT!
SIGH... YOU'RE RIGHT... I'LL SPEND MY LIFE LIKE MOST PEOPLE, CAUGHT IN THE MIDDLE... I'LL NEVER MAKE IT BIG, BUT I'LL NEVER HAVE TH' PISS TO GIT OUT O' THIS RAT RACE EITHER!
OH MAN... IT'S A GRIM PICTURE Y' PAINT...
REALISTIC THOUGH... I'LL GIVE'M CREDIT FER THAT...
STILL, THOUGH, YOU GOTTA KEEP CHIPPIN' AWAY AT TH' ROCK, YA KNOW'D I MEAN?
YEP.... I GOT T' BE RUN-NIN' ALONG... TAKE IT EASY, GUYS!
HEY, YOU TOO, ED.
I'LL SEE YA LATER, PHIL.. YA OL' STU-BUM!
WHAT?!
YOU—
END

Wild rose: 5 petals, "many" stamens

Number is Different from Quantity

Double rose: "many" petals

BY GREGORY BATESON

You can have exactly 3 tomatoes. You can never have exactly 3 gallons of water.

Number is different from quantity. This difference is basic for any sort of theorizing in behavioral science, any sort of imagining of what goes on between organisms or inside organisms as part of their processes of thought.

Numbers are the product of counting. Quantities are the product of measurement. This means that numbers can conceivably be accurate because there is a discontinuity between each integer and the next. Between "two" and "three" there is a jump. In the case of quantity there is no such jump, and because jump is missing in the world of quantity it is impossible for any quantity to be exact. You can have exactly three tomatoes. You can never have exactly three gallons of water. Always quantity is approximate.

In other words, number is of the world of pattern, of *gestalten* and digital computation, while quantity is of the world of analogic computation.

Even when number and quantity are clearly discriminated there is another concept which must be recognized and distinguished from both "number" and "quantity." For this other concept there is, I think, no English word and we have to be content with remembering that there is a sub-set of "patterns" whose members are commonly called "numbers." Not all "numbers" are the product of counting. And indeed it is the smaller – and therefore commoner "numbers" that are often not counted but recognised as patterns with a single glance. Card players do not stop to count the pips in the eight of spades and can even recognize the characteristic patterning of pips up to "ten."

Crows can somehow distinguish number up to seven. But whether this is done by counting or by pattern recognition is not surely known. The story is as follows: A crow can be trained to the following routine. A number of small cups with lids are set out. In these cups small pieces of meat are placed. Some cups have one piece of meat, some two or three, and some cups no pieces of meat. Separate from the cups there is a plate on which there is a number of pieces of meat greater than the total number of pieces in the cups. The crow learns to open each cup, taking off the lid and then eats any pieces of meat that are in the cup. Finally, when he has eaten all the meat in the cups, he may go to the plate and there eat the *same number* of pieces of meat that he got from the cups. He is punished if he eats more meat from the plate than was in the cups. This routine he is able to accomplish.

Now the question is: Is he counting the pieces of meat or is he using some alternative method of identifying the number of pieces? The experiment has been carefully designed to push the bird towards counting. His actions are interrupted by his having to lift the lids, and the sequence has been further confused by some cups having more than one piece of meat and some having none and by separating the moment of reinforcement from the setting of the problem. By those devices the experimenter has tried to make it impossible for the crow to create for himself some

This article is part of a book in progress to be called **Mind and Nature**, *available next Fall from Dutton (New York). It explores one of a series of fundamental statements that Bateson feels every schoolboy should know in order for the rest of his knowledge to make sense. Some of the other statements explored in the book are:*

- *Science never proves anything.*
- *Quantity does not determine pattern.*
- *"Divergent" sequences are unpredictable.*
- *The new can only be generated from the random.*
- *There are no monotone values in biology.*
- *Causality does not work backwards.*
- *Logic is a poor model of cause and effect.*
- *Nothing will come of nothing.*

Bateson is author of **Steps to An Ecology of Mind** *and* **Naven** *and co-author of* **Balinese Culture** *and* **Communication**. *More of his new book will appear in the next* **CQ**.

–SB

What happens with presuppositions such as "Number is Different From Quantity"

I have taught various branches of behavioral biology and cultural anthropology to American students, ranging from college freshmen to psychiatric residents in various schools and teaching hospitals. At all levels I have encountered a very strange gap in their thinking which springs from a lack of certain sorts of tools of thought. This lack is rather equally distributed at all levels of education, among students of both sexes, and among humanists as well as scientists.

The lacuna is, strangely, less conspicuous in two groups of students who might have been expected to contrast strongly, one group with the other. These groups are Catholics and Marxists. Both of these have thought about or have been told about the last 2500 years of human thought, and both groups have some recognition of the importance of philosophic, scientific and epistemological presuppositions. Both groups are difficult to teach because they attach such great importance to "right" premises and presuppositions that heresy becomes for them a threat – of excommunication.

Naturally anybody who feels heresy to be a danger will devote some care to being conscious of his or her own presuppositions and will develop a sort of connoiseurship in these matters.

My subject matter is close to the core of religion and to the core of scientific orthodoxy. The presuppositions – and most readers need some instruction in what a presupposition looks like – are matters to be brought out into the open.

There is, however, another difficulty which is almost peculiar to the American scene. Americans are, no doubt, as rigid in their presuppositions as any other people (and as rigid in these matters as this writer) but they have a strange response to any articulate statement of presupposition. Such a statement is commonly assumed to be hostile or mocking or – and this is the most serious – is heard to be authoritarian.

It so happens in this land founded for the freedom of religion that the teaching of religion is outlawed in the state educational system. Members of weakly religious families, get, of course, no religious training from any source outside the family; i.e., what they get is from parents who went through the state system.

So, to make any statement of premise or presupposition in a formal and articulate way is to challenge the rather subtle counter-attack, not of contradiction because the hearers do not know the contradictory premises nor how to state them, but of the cultivated deafness which children use to keep out the pronouncements of their parents.

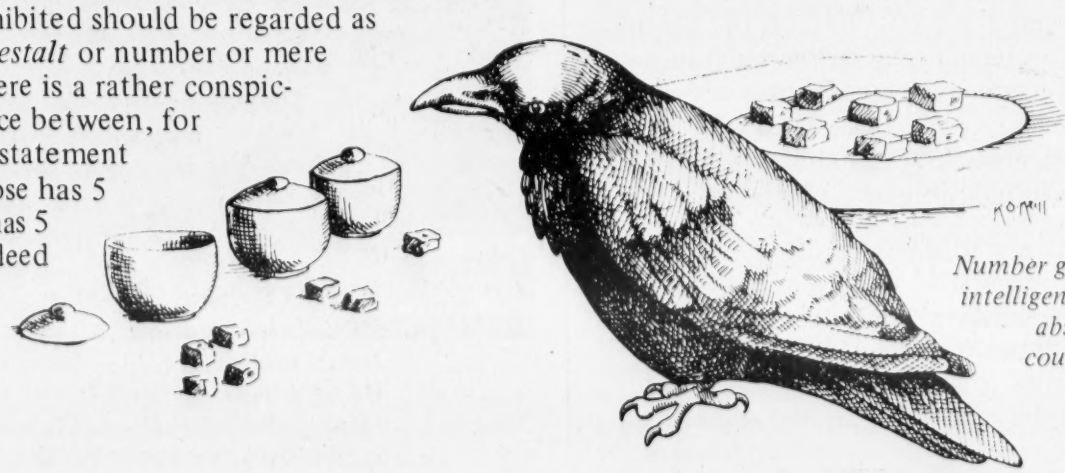
Be all that as it may, I personally believe in the importance of scientific presuppositions, in the notion that there are better and worse ways of constructing scientific theories, and in insisting on the articulate statement of presuppositions so that they may be improved. Their authority will always increase as the premises gather more and more verisimilitude.

sort of pattern or rhythm by which he might recognize the number of pieces of meat. He is thus forced, so far as the experimenter could force the matter, to count the pieces of meat.

It is still conceivable of course that the taking of the meat from the cups becomes some sort of rhythmic dance and this rhythm is in some way repeated when the crow takes the meat from the plate. The matter is still conceivably in doubt, but on the whole the experiment is rather convincing in favor of the hypothesis that the crow counts the pieces of meat rather than recognizing a pattern of pieces.

It's interesting to look at the biological world, with the question whether the various contexts in which number is exhibited should be regarded as instances of *gestalt* or number or mere quantity. There is a rather conspicuous difference between, for example, the statement "this single rose has 5 petals and it has 5 sepals and indeed its symmetry is of a pentad pattern" and the statement "this rose has 52 stamens and that other has 57 and this only 34."

The process which controls the number of stamens is a good deal different from the process that controls the number of petals or sepals. And, interestingly, in the double rose what seems to have happened is that some of the stamens (in some double roses, all of them) have been converted into petals so that the process for determining how many petals has now become not the normal process delimiting petals to a pattern of 5 but has become more like the process which determines the quantity of stamens. We may say that petals are normally "five" in the single rose



Number goes deep. A crow – intelligent but not known for abstract thought – can count and remember up to seven.

but that stamens are "many" where "many" is a quantity having a median value which will vary from one kind of double rose to another.

With this difference in mind, we can look at the biological world and ask what is the largest number which the processes of growth can handle as a fixed pattern beyond which the matter is controlled by quantity. So far as I know the "numbers" TWO, THREE, FOUR, and FIVE are common in the symmetry of plants and animals and particularly in the radial symmetry.

The reader may find a pleasure in collecting cases of rigidly controlled or patterned numbers in nature. For some reason the larger numbers seem to be confined to linear series of segments – the vertebrae of mammals, the abdominal segments of insects, and the anterior segmentation of earthworms. (At the front end the segmentation is rather rigidly controlled down to the segments bearing genital organs. The numbers vary with the species but may reach fifteen. After that the tail has "many" segments.)

It appears that what seemed to be a quirk or peculiarity of human operation, *viz.* that we occidental humans get numbers by counting or pattern recognition, while we get quantities by measurement, turns out to be some sort of universal truth. Not only the crow but also the rose are constrained to show that for them too, for the rose in its anatomy and for the crow in its behavior (and, of course, in its vertebral segmentation), there is this profound difference between numbers and quantity.

The question – What does this mean? – is very ancient, and goes back certainly to Pythagoras (500 B.C.) who is said to have encountered a similar regularity in the relation between harmonics. We go back also to the Eternal Verities of St. Augustine.

> Listen to the thunder of that saint, in about A.D. 500: "7 and 3 are 10; 7 and 3 have always been 10; 7 and 3 at no time and in no way have ever been anything but 10; 7 and 3 will always be 10."
>
> – *Warren McCulloch,* **Embodiments of Mind**

No doubt, in asserting the difference between numbers and quantities I am close to asserting an Eternal Verity – and Pythagoras would surely agree.

But, we can reply to the saint: "Yes, very true. But is that really what you want and mean to say? It is also true, surely, that '3 and 7 are 10' and that '2 and 1 and 7 are 10' and '1 and 1 and 1 and 1 and 1 and 1 and 1 and 1 and 1 and 1 are 10'. In fact, the Eternal Verity which you are trying to assert is much more general and profound than the special case which you use to carry that profound message. And we can agree that that more abstract Eternal Verity will be difficult to state with unambiguous precision."

The distinction between numbers and quantities is, I believe, non-trivial and is shown to be so by the anatomy of the rose with its "5" petals and its "many" stamens; and I put those quotation marks into my description of the rose to suggest that the names of the number and of the quantities are the surfacing of formal ideas. ■

Protect the trophies, slay the children

Dear S.B.

I want to raise a question and CQ is perhaps a good place for it. My mathematics is not good enough but perhaps Peter Warshall or one of your readers will tell me the answer.

The question is simple: Is it good practice to eat up big animals rather than small ones? Would it not make better sense in terms of conserving wild populations to eat the small fish and throw the big ones back?

After all it is the big ones that produce the eggs and sperm – in millions in many cases.

Fish, crabs, lobsters, abalone, deer, – in almost all hunting or "harvesting" of wild animals the law protects the juveniles and permits the taking of the adults. But I suspect that this is based upon some sentimental fallacy.

The question looks like this: Suppose that fish of a given species produce *N* offspring per female adult per year; that of these offspring .01% start to produce their own offspring in 3 years and go on producing for 3 years. Which should we eat – the bearing adults, the new adults, or the pre-adolescents?

I suspect that the .01% figure is rather stable in the sense that predation by birds, bigger fish, bacterial infection, epidemics, etc., etc., will be a function of density of population. If there are more baby fish, the predators will get more. If this be so, and we eat a lot of the babies, this will simply leave fewer babies for the other predators to eat and the number of babies who reach reproductive maturity will not be severely reduced. Perhaps?

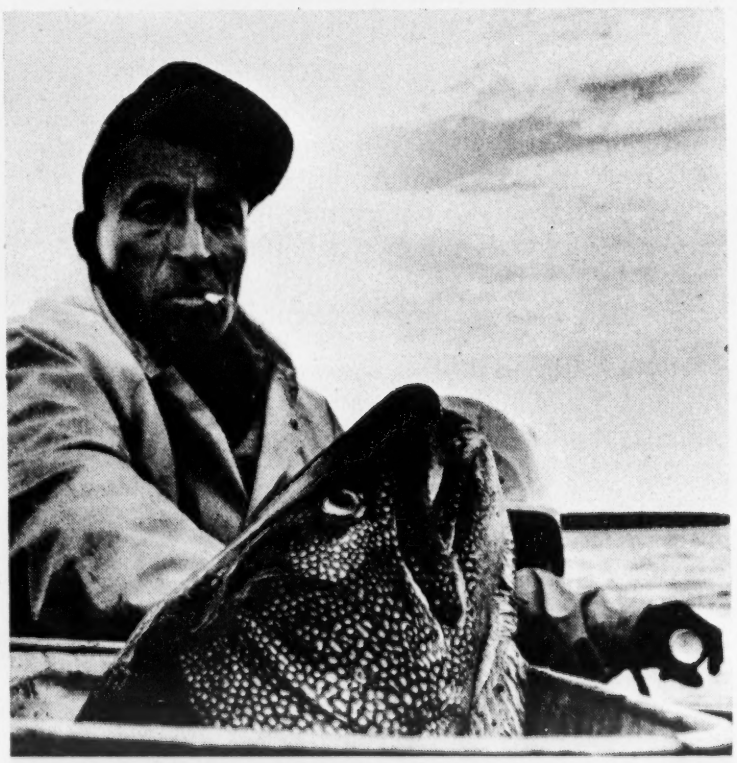
What will the relevant mathematics look like for creatures like salmon who spawn only once? Creatures which have few babies and a high survival rate, as contrasted with fish with many free floating eggs? And so on.

Was Hillaire Belloc right in his ecological jingle:

> Parents of large families
> With claims to common sense
> Find a tiger well repays
> The trouble and expense.

Yours infantivorously,

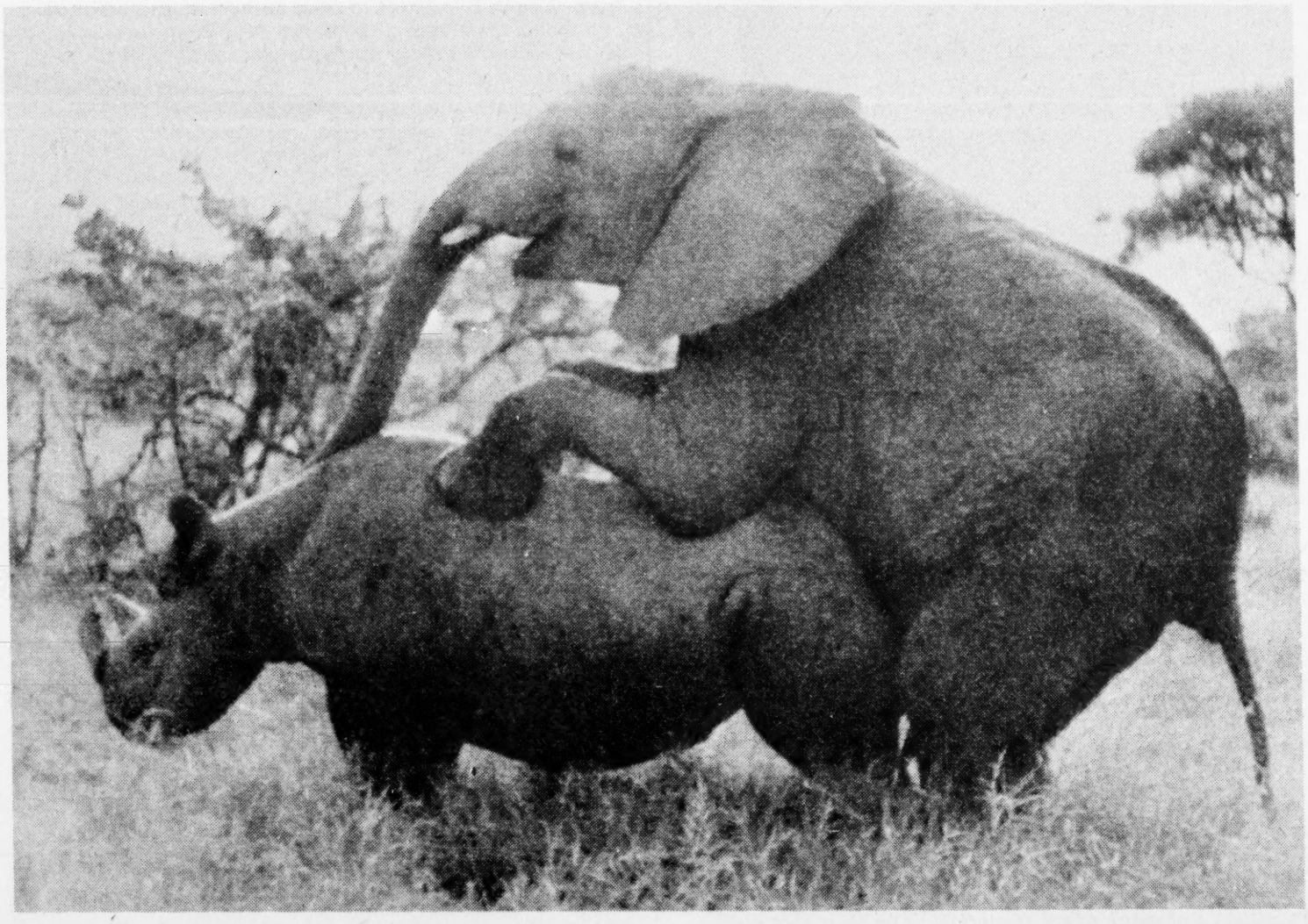
Gregory Bateson
Santa Cruz, California



Indian guide with trophy lake trout in Canada's Northwest Territories.

Untitled

Former employee Don Ryan sent this photograph from a recent issue of the German magazine "Stern." Don wrote, "Is this the first step (or is it the last) in a co-evolutionary game?"



Information Theory and the Living System

Steps to an Ecology of Genes. A testable conception of evolution more satisfying than that of Mendelian roulette. Providing basic instruction, Gatlin expands on Shannon's math and examines the genetic code through the lens of information theory. She arrives at a theory of "Second Theorem Evolution" which can keep researchers busy for some time. References to her work are beginning to crop up in the literature of the field, but I doubt this can go far before some controversy erupts. Gatlin's paradigm not only challenges many assumptions of current biological thought, but contributes to a revolutionary scientific view of our evolving selves.

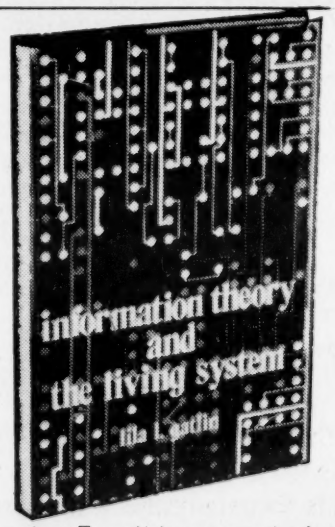
Gatlin honestly confronts these sticky questions, and explains her position in typical style: clear, concise, reasonable. The book is special because Gatlin acknowledges the philosophy behind her theory and presents both. Other features:

- *Chapters headed by quotes from Gibran,*
- *A unique approach to the "reductionist-antireductionist controversy,"*
- *Introduction to relevant ideas from Arthur Koestler, Michael Polanyi, Thomas Kuhn, cyberneticians and game theorists*
- *Extensive math and esoteric concepts made easy and attractive.*

This is a work of rigor, integrity, and beauty born of a wide and sensitive awareness.

—Eric Nygren

Information Theory and the Living System
Lila Gatlin
1972; 210 pp.
$12.50 postpaid
from:
Columbia University Press
Stock Dept.
136 S. Broadway
Irvington-on-Hudson
NY 10533
or Whole Earth

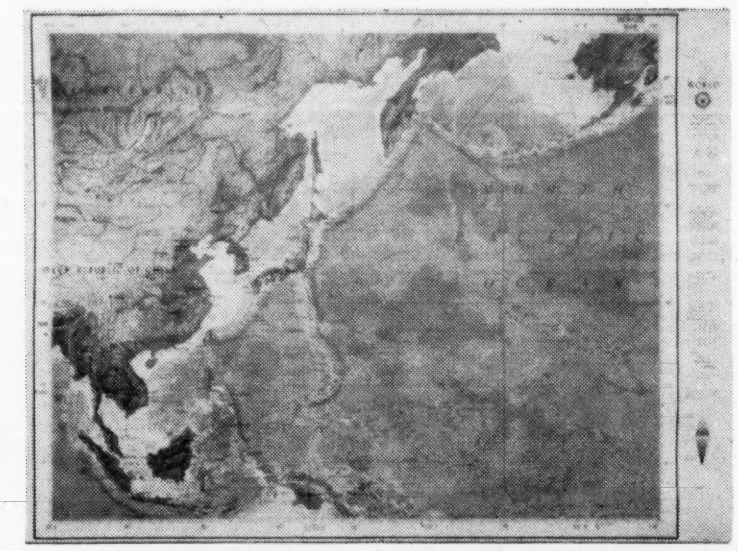


•

I think our classical notions of entropy as they come to us from the presently established "laws of physics and chemistry" are totally inadequate in dealing with the living system. This does not mean that there is anything mysterious, supernatural, or vitalistic about the living system. It simply means that our classical notions are *inadequate.*

Bremmermann (1967) has shown that E. coli is a marvel of thermodynamic efficiency and perhaps approaches 100% thermodynamic efficiency. *If improving the hardware of the computer were the only method of improving the efficiency of information processing in the living system, evolution would have reached its apex in E. Coli.*

The laws of information theory go far beyond the second law of thermodynamics. We have shown specifically how an entropy maximization at the output of an information processing channel can be directly responsible for a decrease in entropy of the sequence of symbols at the input. The two are directly coupled. The classical view tends to explain localized entropy decreases as random fluctuations rather than specific couplings. In living systems there exists a complex hierarchy of interlocking entropy maxima and minima, and the maximization of one *kind* of entropy can result in the minimization of another. This is an extension of the concept of the second law.



South Pacific, one sheet of nine.

World Map

Best map bargain we've seen. Nine feet by twelve feet — when the nine 3' x 4' sheets are assembled — of beautiful color cartography. For $17.65 postpaid! It's equally enjoyable as separate sheets or an entire wall, or as J. Baldwin suggests, cover it with epoxy and make a wonderful floor.

—SB
[Suggested by Patty Phelan]

World Map
No. 1142
$17.65 postpaid

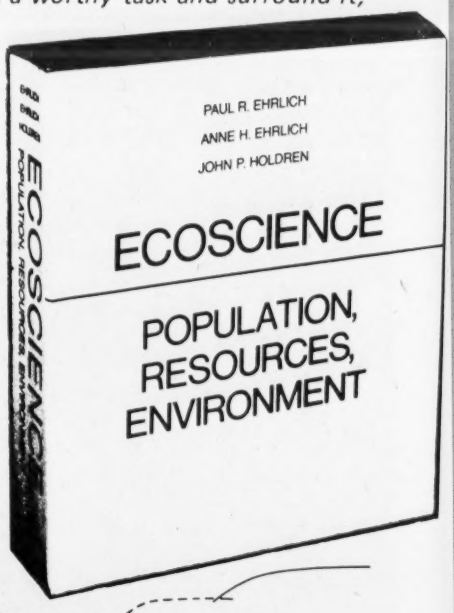
from:
Defense Mapping Agency
Topo Center
Attention: DDCD
6500 Brookes Lane
Washington, D.C. 20315

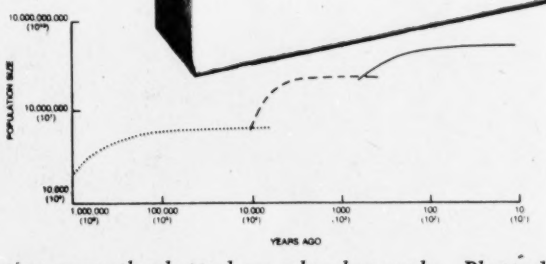
Ecoscience

If you could save the world by throwing a book at it, this might be the book. (Actually the book that will do the saving will likely be called "Ecoreligion," and be derived in part from this book.) Meant to be as comprehensive an outline as possible (in a mere 1051 pages) of all that the young world-saver needs to know to find a worthy task and surround it, the book succeeds.

—SB

Ecoscience
(Population, Resources, Environment)
Paul R. Ehrlich, Anne H. Ehrlich, John P. Holdren
1970, 1977; 1051 pp.
$19.95 postpaid
from:
W.H. Freeman & Co.
660 Market Street
San Francisco, CA 94104
or Whole Earth





Human population growth plotted on a log-log scale. Plotted in this way, population growth is seen as occurring in three surges, associated with the cultural, agricultural, and industrial-medical revolutions.

Neuropolitics

It's always a pleasure to eat my words. I've been knocking Tim Leary of late for his uncritical, exploitively simplistic touting of Space — reminiscent of the harm he did to psychedelic research. But I must add that the same man has produced a damned interesting book. It is a vivid, well-written account of his prison years. The interplay between his airy, scientistic philosophizing and the muck he's in is dramatic and of good humor. In jail his nonsense makes sense — the ideas are entertaining and entertainable.

—SB

Neuropolitics
(The Sociobiology of Human Metamorphosis)
Timothy Leary with Robert Anton Wilson & George A. Koopman
1977; 160 pp.
$6.95 postpaid
from:
Starseed/Peace Press, Inc.
P.O. Box 188
Culver City, CA 90230
or Whole Earth

The Extraterrestrial Agent sits on the floor, looks over the cell again. Reduced to isolation and helplessness, the bio-survival circuitry and emotional-glandular systems react in primitive, emergency patterns. The trained Neurologician scans the circuitry, turns off the surrender/bail-out/die reflex, tunes in the success/bliss/patience networks and serenely waits for the past to catch up with the future. Eighteen prisons and jails in five years are good preliminary training in neurological engineering.

He hears a voice.

"So you finally made it here. I've been watching you fall for years, man. You know where we are?" The voice is cocky, somewhat patronizing. The lotus-position character in the next cell, who sent the books and coffee makings. Charlie Manson. He repeats: "Do you *really* know where we are?"

"Where are we?"

"This is eternity, brother. This is the end of the line. No one ever gets out once they've been here. This is forever."

Leri listens to the voice with pity and irritation. He senses that Charlie speaks a resigned subjective truth. True, that is, for Charlie. The Commodore is not willing to be included in that reality, which he is planning to discard. But anybody on the inside deserves compassion. Besides, the Neurologician understands how this reality has been formed. Fear is the force that energizes and structures our social institutions, and Charlie is the totally institutionalized man, a Kafkaesque symbol of our technical-moral domestication. The military mind.

"Hey," Leri calls. "Did you send me the Bugler and the food? Thanks."

"It's my pleasure," says the voice. "I love everyone and try to share what I have. I've been waiting to talk to you for years. Our lives would never have crossed outside. But now we have plenty of time. We were all your students, you know." The voice is low with the assurance of a fundamentalist minister.

"What do you mean?" The Wizard is leaning against the bars, cocking his ear to catch the soft, self-assured words.

"You know how it happened. I had been in prison all my life, and when I got out in the middle of the Sixties, there was a whole new world. Millions of kids cut loose from the old lies, free of hangups, waiting to be told what to do." The voice takes on a slight edge of complaint. "And you didn't tell them what to do. That's what I never could figure out about you, man. You showed everyone how to create a new head and then you wouldn't give them the new head. Why didn't you? I've wanted to ask you that for years."

"That was exactly the point," the Professor replies wearily. "I didn't want to impose my realities. The idea is that everybody takes responsibility for his nervous system, creates his own new reality. It's the end of the monotheism trip, remember. You can be anyone this time around. Anything else is brainwashing."

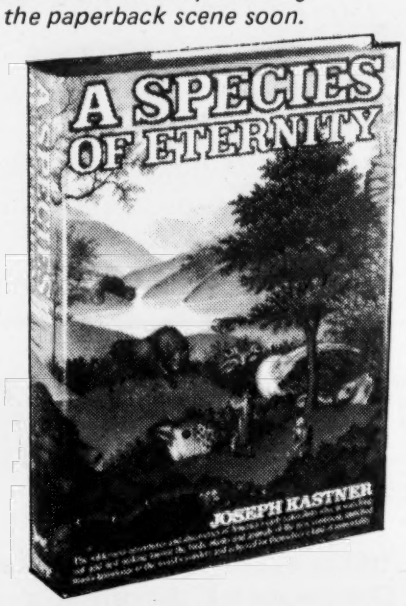
"That was your mistake," the voice says in a ghost-hollow whisper. "Nobody wants responsibility. They want to be told what to do, what to believe, what's really true and really real."

A Species of Eternity

When Euro-Americans first hit the shores of Turtle Island, they saw this wilderness as alien – full of unfamiliar critters and non-useful plants. A small handful of men and women fell in love with North America – overjoyed with the mystery of new species lurking in streams and bushes. This is their story. The first half-crazed, half-scientist, half-artist, totally high naturalists in the "New World."

This is the story of my personal lineage of teachers of the 18th and early 19th Centuries. Their kinship to each other and to the broadleaf woodlands has never been more humorously and accurately told. The book is expensive but has many fine color reproductions of early drawings and engravings. Hope it hits the paperback scene soon.

–Peter Warshall



A Species of Eternity
Joseph Kastner
1977; 350 pp.

$15.00 postpaid

from:
Alfred A. Knopf, Inc.
455 Hahn Rd.
Westminster, MD 21157
or Whole Earth

That night Audubon heard a great uproar from the naturalist's room. "I opened his door and saw him running about naked in pursuit of bats. He had my favorite violin by the handle and proceeded to bash it against the wall in an attempt to kill the winged animals. He begged me to procure a bat for him – 'a new species.' I took the bow of my battered Cremona violin, and soon got specimens enough."

At Rafinesque's request, Audubon took him out into

> one of those thickets or brakes in which the cane grows from twelve to thirty feet in height. A fallen tree obstructed our passage. We were about to go round it when out of the center of the tangled mass of branches sprang a bear with such force and snuffing the air in so frightful a way that Rafinesque was terrified. In his haste to escape he fell and was pinioned between the stalks. Despite his thorough fright, I could not refrain from laughing at the ridiculous exhibition he made. The way became more and more tangled. The thunder began to rumble. Heavy rain drenched us. Briars had scratched us, nettles stung us. Rafinesque threw away all his plants, emptied his pockets of fungi, lichens and mosses. I led him first one way, then another until I myself, though well acquainted with the brake, was all but lost in it. I kept him stumbling and crawling until long after midday.

Leading his guest through the canebrakes was cruel enough but even crueler was a scientific hoax Audubon played on him, describing and drawing a dozen local fish which never existed except in his own tall tales. Taking Audubon at his word, Rafinesque included ten of Audubon's imagined creatures in his pioneering work on western fishes.

> The Devil-Jack Diamond fish (Litholepsis admantinus) [Rafinesque wrote], the wonder of the Ohio. I have seen it but only at a distance and have been shown some of its singular scales. Wonderful stories are related concerning this fish but I have principally relied upon the description and figures given me by Mr. Audubon. Its length is 4 to 10 feet. The whole body is covered with large stone scales half an inch to one inch in diameter. They strike fire with steel! and are ballproof!

It was perhaps inexcusable for Audubon to carry a joke so far. It was certainly inexcusable for a naturalist like Rafinesque to be gulled by such stuff. He was, after all, one of the most widely experienced scientists in America. "In knowledge," he wrote of himself, "I have been a botanist, naturalist, geologist, geographer, historian, poet, philosopher, economist, philanthropist. By profession, a traveler, merchant, manufacturer, collector, improver, professor, teacher, surveyor, draftsman, architect, engineer, author, editor. I hardly know what I may not become as yet." One of the most traveled men of his times, he covered "over 25,000 miles, half by sea, half by land. One-fourth pedestrian journeys . . . by mules, asses, litters, sedan chairs, chaises, men's backs, feluccas, tartans, boats, arks, scows, nearly all the possible manners except by camel and in balloons."

Natural History in America

From the revolutionary wars to the 1970s, the lineage of naturalists diversifies. There is Rachel Carson and Thoreau; Teddy Roosevelt and Aldo Leopold. A straightforward presentation of this longer lineage (missing some greats like John Wesley Powell) can be found in **Natural History in America** *by Wayne Hanley ($14.95; 339 pp; 1977) from Quadrangle Press, Three Park Ave., New York, NY 10016.*

–Peter Warshall

Endangered Species, and WIN

We are at a point where Vigilance may be lost. The Furbish Lousewort and the Snail Darter seem so irrelevant to most humans that laws (desperately needed to preserve the gene pool of Earth) are being diluted. Saving cutesy baby seals and intelligent dolphins seems easy. But, the mysterious and unknown fish of the Little Tennessee called the Snail Darter . . . who cares?

Two bulletins are keeping the vigil. The **Endangered Species Technical Bulletin** *is published monthly by U.S. Fish and Wildlife Service, Dept. of Interior, Washington, D.C. 20240. It is available free to those organizations and individuals who show a direct involvement in the endangered species program. You must send a summary that clearly demonstrates need. It's a great stimulus to unceasing awareness.*

The action equivalent is **WIN** *($6.00/year to cover costs) from the Sierra Club Wildlife Involvement News, 800 Second Ave., New York, NY 10017. Wildlife ecology, political action, debates (should the California Condor be bred in captivity?) and news (the Red Wolf is currently the most endangered mammal in North America). Needs support. Does good work.*

–Peter Warshall
[Suggested by Dean Lyon]

Bio-Dynamic Agriculture

Based on the techniques developed in the early part of this century by Rudolf Steiner, Bio-Dynamics is a well-researched attempt to orchestrate the relationships of plants, animals, microorganisms and the elements. The goal is to develop a natural harmony in the artificial situation of a farm or garden. Here are described the techniques used by the famous bio-dynamic farms of Europe to produce superior crops and livestock. While this may be an introduction, it is not for beginners.

–Rosemary Menninger
[Suggested by George de Alth]

Bio-Dynamic Agriculture
(An Introduction)

Herbert H. Koepf, Bo
D. Pettersson, &
Wolfgang Schaumann
1976; 416 pp.

$12.00 postpaid

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Experience gained over more than a decade has shown that the division of vegetables into roots, leaves and fruits is a good basis for establishing a crop rotation thus giving us a useful guideline when planning a vegetable garden. In successive years the soil is enabled to produce the different "organs" of the plant and in this way fertility is maintained instead of being weakened by, for instance, repeated demands to form leaf vegetables. In a four-year cycle each plot can produce first leaf vegetables, then roots, then fruits and seeds, and finally flowering plants.

Wendell Berry started this argument. His most recent book, **The Unsettling of America** *(1977, Sierra Club Books), "deals at length with the assumptions and policies of former Secretary of Agriculture Earl L. Butz," as Wendell says in the preface. It's an eloquent book and a popular and influential one, without a kind word for Butz' ideas in it. We printed a goodly portion of the book in the Spring 1977* **CQ** *and are pleased to be around for this brawl, a debate that really is one.*

Dr. Butz, 69, during his tenure as Secretary of Agriculture from 1971 to 1976 was a highly visible, forceful spokesman for agribusiness and was popular with his farmer constituency. When fired by President Ford for the offense of having a fine vicious joke overheard by press, he left office gracefully and without apparent rancor. At present he is Dean Emeritus of Agriculture at his alma mater, Purdue.

Ed McClanahan, an old friend of Wendell's and ours, put us wise to the debate at Manchester College, North Manchester, Indiana, on November 13, 1977. It seems that an English teacher named Charles Boebel put together the occasion as part of the Life Schools Community Forum — The Crisis in American Agriculture, sponsored by the Indiana Committee for the Humanities. We're grateful for photographs to Debbie Lampert Dupré at the **Wabash Plain Dealer** *and for photographs and additional tape to Jeffrey Hooper of the Appalshop, Whitesburg, Kentucky, who filmed the event. —SB*

Earl Butz VERSUS Wendell

Butz: I see we're supposed to debate about "The Crisis in American Agriculture." I think the word "crisis" is grossly overworked. I think if we asked what the crisis was, we'd get all kinds of answers here and some people would have a great deal of difficulty in even giving their own concept of what the crisis is, if indeed there is a crisis. It's a word that I refuse to place very high in my vocabulary, because if you look very hard on the other side of every coin you call crisis, it's opportunity.

So often I think we cry crisis when we want to resist change. We have a nostalgia for what was — the good old days. Somebody told me, the best thing about the good old days is a faulty memory. There were some good things about them, to be sure, but I don't especially like some of the other things when I begin to remember in detail about the good old days.

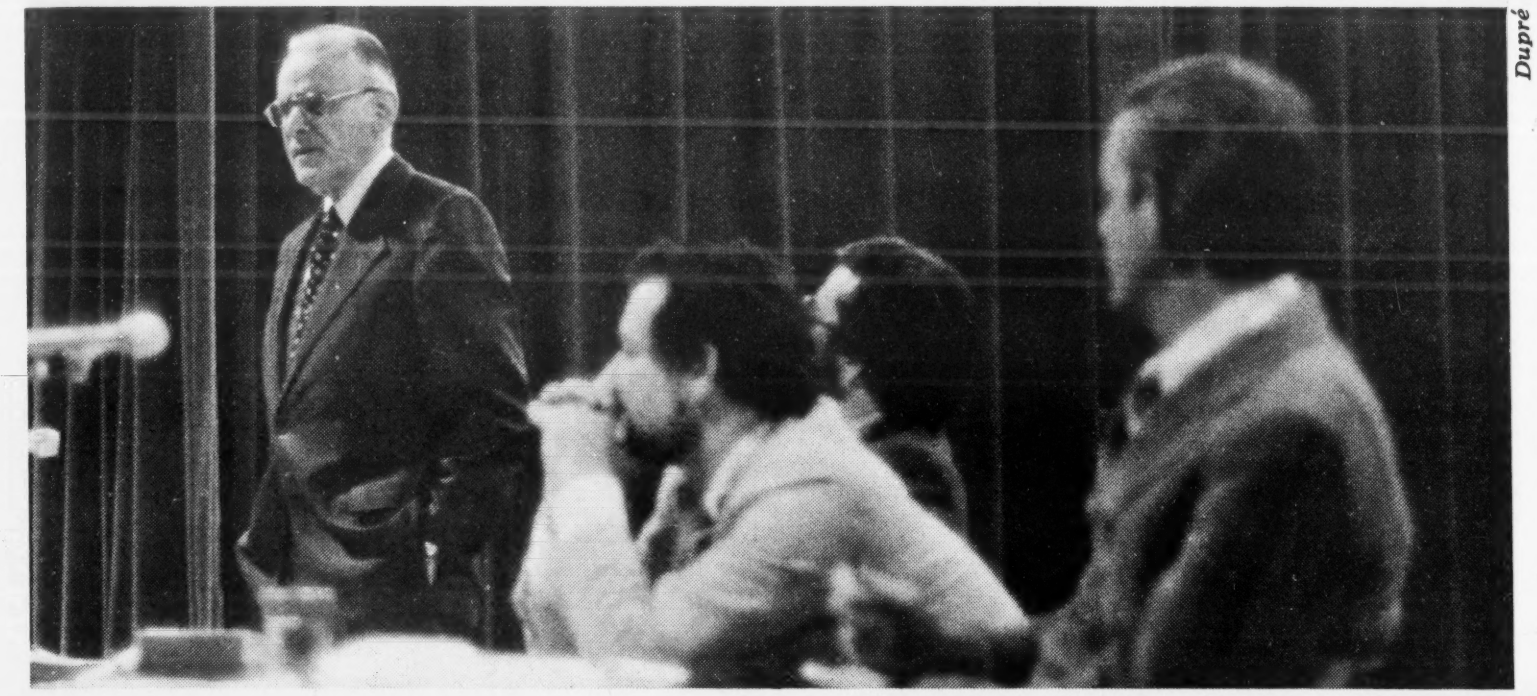
I want to make some comments about the positive side of American agriculture — some of the reasons why American agriculture is *not* in crisis, some of the reasons why modern American agriculture is the very foundation of the strength in America. I have read **The Unsettling of America.** There are a few paragraphs in it with which I agree, not many. I don't want to go back to the good old days. I don't want to go back to the outdoors pump and you carry water into the kitchen. I don't want to go back to the old round wood stove we had up here in Noble County 40 miles up the road, where the fire went out at night and mother got up to build a fire the next morning and dad did once in a while but not very often. I don't want to go back to the oil lamp by which I studied until we got a Delco light system which seemed like heaven itself — and by today's standards would be very obsolete.

I don't want to go back to the lantern I carried doing chores. I don't want to go back to the back-breaking toil of cleaning out the stables by hand on Saturdays. Dad always left the barn to clean until Saturdays 'cause the boys were home from school. I don't want to go back to the hard toil we had and the long days. I don't want to go back to the fact that our entertainment on those long winter nights was the Sears Roebuck wishbook that we looked at. In the spring we got an order off — we were all winter putting it together.

I don't want to go back to the very short cash days we had growing up back there. I don't want to go back to riding to high school three years in a horse and buggy. The last year Dad got a Model T Ford and we drove. I don't want to go back to the low level of cash income we had on the farm, the high degree of self-sufficiency where we made our own clothes in the main, and made our own baseballs at school by unravelling sock and puttin' carpet warp in it to hold it together, until it got wet and came to pieces. Well, I can go ahead and name things I don't want to go back to.

I only want to go forward. I want to live in a changing society. That's the kind we're living in. I don't want to live in a static society.

What about American agriculture and some of the contributions it has made and is making? I sat in Brezhnev's office in Moscow a few years ago and we were discussing agriculture with remarkable frankness. He said, "Forty-five percent of my people are on the land. And I can't put my people into the business of producing consumer goods — TVs and radios and automobiles and that kind of stuff — 'till I can learn somehow to feed my population with less than 45 percent of my people on the land." And I thought, 'Yes sir, Mr. Brezhnev, you are right now where my country was when I was born.' (Sixty-eight years ago that was — just to save you arithmetic.) We were an



Dupré

Berry

Butz: I have read **The Unsettling of America.** There are a few paragraphs in it with which I agree, not many.

agrarian nation — 45 percent of us were on farms. If we had known then how to make nice automobiles and radios and TVs and bathtubs and nice schoolhouses like this one here, if we had known how to do that, we couldn't have spared the manpower to do it. We had to have 'em out in the field with a pair of plow handles in their hands. I can feel those lines around my back right now, guiding the horses like that.

Today we not only feed 216 million Americans much better than we did then, but we've got 24 billion dollars worth in the last year to send abroad — our number one source of foreign exchange. We've moved from 45 percent on the land to about 4 percent on the land now. I know that causes some sociological problems. Change always does. On the other hand, all of us live better because of it — including those remaining on the land. They're in the commercial stream now. They too have electricity. They too have indoor plumbing. I didn't grow up with five rooms and a bath up here in Noble County, I grew up with four rooms and a path. How many of you did? Can I see your hands? . . . For you youngsters, it wasn't all that bad. On those cold winter mornings you learned to do things in a hurry. You can't find one in this county now, except at the resort out at the lake and you brag about it.

We've learned how to feed ourselves with a little manpower and a shirt-tail full of resources. Let's never forget that. I'm talking about modern, scientific, technological agriculture. It's big business, to be sure. We are still family farms. We talk about the corporation farm — less than 1 percent of our farms in America are corporation farms, and 9 out of 10 of them are incorporated for the purpose of passing title from father to son without breaking it up as they pass the tax collector.

What's it all amounted to then for America? It means that today we feed ourselves for a little less than 17 percent of our take-home pay in America. That's less than any place else on the face of the Earth. It's less than any time previously in the history of America. Now, I know food prices have gone up and I know people talk about it. The other day I was on one of these one-on-one TV shows, somewhere in Chicago I think. We had this smart-aleck young reporter. He thought, "I'll get Butz" right with his first question. His question was, "When are food prices going to go down?" And I said, "Well, food prices are going to go down about the same time the cost of advertising food on this station goes down. They're going to go down about the same time they reduce your salary. When do you want to start the cycle?" He said, "Well, since you put it that way, let's talk about something else."

Now, he asked the right question. He asked the question that every housewife listening wanted to know. He just got the wrong answer to it. The plain truth is we buy our food today in America for a smaller share of our take-home pay than ever before in the history of America.

And we get all that built-in maid service with it — the frozen TV dinners that you poked in the oven tonight before you came down here. You take that ounce and a half of meat in one of those TV dinners and multiply it up to price per pound, it's not for cheap. I was out in Idaho a couple weeks ago, and they took me to one of these potato-processing plants. They said we now process at or near the point of production two-thirds of the potatoes we eat in America. You got to peel the potato to make it go in the American kitchen any more, it won't go in unpeeled. And that's not for cheap — somebody has to do that.

[more →]

Hooper

Butz: When I was born in 1909 we were an agrarian nation — 45 percent of us were on farms, instead of 4 percent as we have now. If we had known then how to make nice automobiles and radios and TVs and bathtubs and nice schoolhouses like this one here, we couldn't have spared the manpower to do it. We had to have 'em out in the field with a pair of plow handles in their hands. I can feel those lines around my back right now, guiding the horses like that.

I've heard a lot about the wonderful agriculture in China. I've heard a lot about the way that there isn't any hunger in China. Well, hunger's relative. But they've got 80 percent of their people on the land. When I hear some of these characters out here talk about we have to reverse the flow and put people back on the land, I wonder how far back you want to go. You want to go back to where Russia is, with 45 percent on the land? You want to go back to where India is with 60 percent? You want to go back to where China is with 80 percent? How far back do you want to go anyway?

When I was a kid and there were 40 percent of us on farms in America we didn't have any school houses like this. We had the little one-room country schools — that's the best we could afford. If you taxed yourself then like you do now the economy simply wouldn't have supported it, the surplus wasn't there to pay for it. Ninety-six percent of our families in America have a TV set. And 55 percent have two TV sets. The programs aren't good enough for one. Because we spend only 17 percent of take-home pay for food is the reason that nearly 90 percent of our families have an automobile. And 45 percent have 2 automobiles. If you've got a youngster in high school — three. We have an average of two people per automobile in America. In Russia, the super race, 40 people per automobile. You don't have to look very long for a parking place there.

That's why I refuse to accept the word crisis here. We have our problems to be sure. There are adjustments to be made, as is always the case. We're losing people on farms — by definition — as the family farm gets bigger. There're only so many acres in Wabash County, and you divide it among fewer operators. They're still family farms. At some point you reach an irreducible minimum, but never forget that the farmers in Wabash County are still family farmers. I shook a good many of your hands here tonight. I could tell which of you worked for a living. The callouses were here.

The other day this circus train was speeding across Illinois out here. They had this car with a baboon in it. The car door flew open, the baboon jumped out and hit a telegraph pole, and it killed him dead right there. A few hours later a couple farmers came along. They didn't recognize what it was. One of 'em said, I wonder who this is? The other one said, Well I don't know but judgin' from the location of his callouses, he must be a government worker.

We support a lot of government workers, because one worker on an American farm can now feed and clothe himself and approximately 70 other people. When I was a youngster up there in Noble County, he could feed and clothe himself and about 9 other people. I think it's a remarkable story of success. Not only do we feed our people in America better than ever before and cheaper than ever before, we got 24 billion dollars worth of surplus products to send abroad. It's our number one source of foreign exchange. It's the way we paid for this Sony microphone. What kind of recorder is that there — Panasonic? Where was it made? Japan. Somebody got a still camera? It may be American, but you look at the parts — they came from Japan. We didn't pay for a single one of those things with Japanese yen. We paid for 'em with Indiana-produced corn and soybeans and wheat. And I think it was a pretty good exchange myself. We just make soybeans better than they do and they make cameras better than we do.

Twenty-four billion dollars worth of that we sold abroad last year. And when you subtract what we paid for imported foodstuffs — half the sugar we eat, and coffee and tea and bananas and that kind of stuff — we spent 11 or 12 billion dollars for that. So we made a net plus contribution last year in American agriculture to our balance of payments of 12 billion dollars. Believe me, that's rather important in this year when our overall balance of payments is running about a negative 25 billion. It's a serious matter — the dollar's under attack in the international exchanges of the world.

Well, that's American agriculture. It's in change to be sure. I know that some of the rural institutions are under pressure. I know the old country church is under pressure. The little church I went to up there in Noble County just 40 rod down the road, it's torn down. It's not there any more. The little one-room school I went to is now a hay-storage place for my sister and brother-in-law. But our challenge is not to yield before the nostalgia of yesteryear. Our challenge is not to turn the clock back. Our challenge is not to go back to more inefficient ways. Our challenge is *not* to put more people back on the land and therefore decrease the efficiency of American agriculture. Our challenge is to adapt to the

Berry: Mr. Butz and I may never meet, because he's arguing from quantities and I'm arguing from values.

Dupré

changing situation in which we find ourselves. We need to evolve a new community structure. I'm fully aware as everybody else is that we've lost our old community identification around the rural school and the rural church. And yet there is a cohesiveness in this group here tonight. There is a cohesiveness in this North Manchester community, and our job is to develop that, is to give it strength, and give it meaning to move ahead. I've often thought that if I live long enough, that I'm going to adopt Butz's Law of Economics – it's a very simple one: Adapt or Die. It's a harsh one. But those who cling to the moldering past are the ones who die. They truly are the ones to which the word crisis would apply.

In my time I have seen so many improvements in the overall level of living of America and I've seen it tied right back to this efficient agriculture, that has applied change, that has applied technology, that's using capital, that has increased its efficiency, so that all America lives better in any way you want to measure. The people on welfare in this country live better in terms of the things they have than the top half of any population any place else on the face of the Earth.

The overriding objective of all of us in this world is peace. I've travelled the world a great deal. I've been behind the Iron Curtain. I've broken ranks in Moscow and Warsaw and Hungary and Yugoslavia to talk with people on the streets I wasn't supposed to talk to. In their hearts beats the urge for peace the same as in ours. Perhaps more than ours, because they've seen their countries destroyed. They've seen their loved ones killed before their eyes. They may want it on different terms than ours.

I am convinced that in this tremendously productive American agriculture we have the building blocks on which the diplomats of the world can build a structure of peace. And I think that peace is something more enduring than the absence of war. It's a positive thing.

In India shortly after the Indians got their independence from Great Britain, one day Gandhi very sagely remarked, "Even God dare not approach a hungry man except in the form of bread." I've seen starving men. No use talking to a man like that about human dignity. No use talking about democracy. No use talking about freedom. He listens only to the man who has a piece of bread.

And that is precisely the language we are prepared to speak in the United States. To speak loudly, to speak eloquently. We're kind of awkward with it, it's a new role for us. We're learning how to do it. But we have the capacity to do it. And we have that capacity because modern agriculture in this country is what it is. It's efficient. It's progressive. It's productive. And it's relatively free.

Thank you very much.

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Berry: My basic assumption in talking about agriculture is that there's more to it than just agriculture. That you can't disconnect one part of a society from all the other parts and just look at the results in that alone.

Let me give you as an example of what I'm talking about – a little parable that hundreds of people are acting out all the time. This country is full of people now who've been liberated by modern agriculture from having to do any of what Dr. Butz called backbreaking work. And they look forward to a life of leisure. They've got nothing to do with their bodies except enjoy themselves. But when they get started on this life of leisure they discover that even to enjoy the many physical pleasures that are now available to them they've got to get in shape. So they go and take out a membership in a health spa and lift weights all day so they will be in shape to enjoy themselves at night. They've been liberated from meaningful work in order to pay to do meaningless work in order to keep healthy.

There's bound to be some kind of a connection between the liberation, so-called, of millions of people in this country from so-called backbreaking or menial work and the health problem. I don't know if you'd call it a health crisis or not; crisis is not a favorite word of mine either. But there is a health problem. The last figures I read were that everybody in the country now is paying $500 a year medical expenses. That's $2000 a year for a family of four. That's too much. It seems to me that it might be conducive to health if people were doing more work.

And I don't want to go backward. I don't think that there's ever been a moment in history that's had enough net good in it to lure people back to try it

again. I think what we all want to try is the future. It's just a question of how we try and who gets to make the attempt. Rather than talk very long and general, I'd like to talk about the part of the country where I come from and I hope that my feelings on agriculture and policy implications will be clear to you from what I have to say about it.

I come from Henry County, Kentucky, not too far from Indiana. It's easy for us to come over to Madison sometimes to shop. Henry County is a place of fertile land but a very broken rolling topography. It's a topography that makes the ground subject to erosion, especially since it's clay soil. Historically it's been highly productive agricultural country. It's one of the best tobacco counties in the state, but tobacco's always been part of a fairly diversified farming program, and so if you look back in Kentucky history, you find Henry County way up there among the livestock producing counties in the state. Traditionally Henry County was farmed by small farmers. When I was a boy there a two-hundred acre farm was a pretty big farm. For the reasons of topography that I have mentioned, it still needs to be farmed by small farmers. It needs to be farmed by people who know it very well, who care very much about it, and who will stay at home and pay attention to it.

What's happening in Henry County is what's happening every place. The farms are getting bigger, more mechanized, and the farmers are disappearing at a great rate. Henry County lies in what the real estate people call the golden triangle – between the interstate highways connecting Louisville, Kentucky, and Cincinnati, Ohio, and Lexington, Kentucky. This is driving the land costs at home way up, and the farmers aren't able to buy.

People who're buying it are city people – doctors and lawyers and businessmen of various kinds. They are able to pay the costs and the high interest rates and they get as a reward a place to come out to with their friends on the weekends. They make some of the worst neighbors that history has ever known. They don't know anything at all about a line fence. They don't know what their obligations are. I had a neighbor like that who told me he didn't need to build his part of the line fence because he didn't have any cattle. One of them told his neighbor that he was sure that he didn't need to build his part of the line fence because the hillside was so steep that the cattle would never go up where the fence was anyway. Well, I could tell you a lot of fascinating illustrations of the aptitude these people have for farming and for being neighbors, but I won't.

This is the pattern of modern agriculture where I live, and I think it's repeated in many places. The land has fallen into the hands of first the farmers' widows and then of these moneyed people who aren't farmers. The land is then cash rented to young farmers who've made their investment not in land – which is appreciating – but in machinery – which is depreciating. And they're renting the land with cash, breaking it whole farms at a time, planting them to corn and soybeans. They're not using any animals. Not rotating back through pasture – which probably 90 percent of that land needs to be. They're not sowing any cover crops. They're plowing up the waterways and cutting the fences. Farm houses are going down. They're driving in, producing the crop, loading it and driving out with it. In other words, in their patches the industrialization of farming is complete. They're treating the farm exactly as you would treat a factory or a mine.

This land is highly productive. And it will be for a while. But already the stories are beginning to circulate of land cleared with bulldozers, put in corn one year, and ruined. None of this land is being better farmed now than it was 30 years ago. In fact it's being neglected, abused, and wasted as never before. I've told you the grain farming angle of it. Another angle is for somebody to go in on one of those steep farms and capitalize it heavily with silos, dairy barn, loafing shed, and so on, contract a heavy debt on it, and then cover it up with Holstein cows that require it to be grazed far beyond its carrying capacity, and what isn't damaged that way they tramp into the hollers.

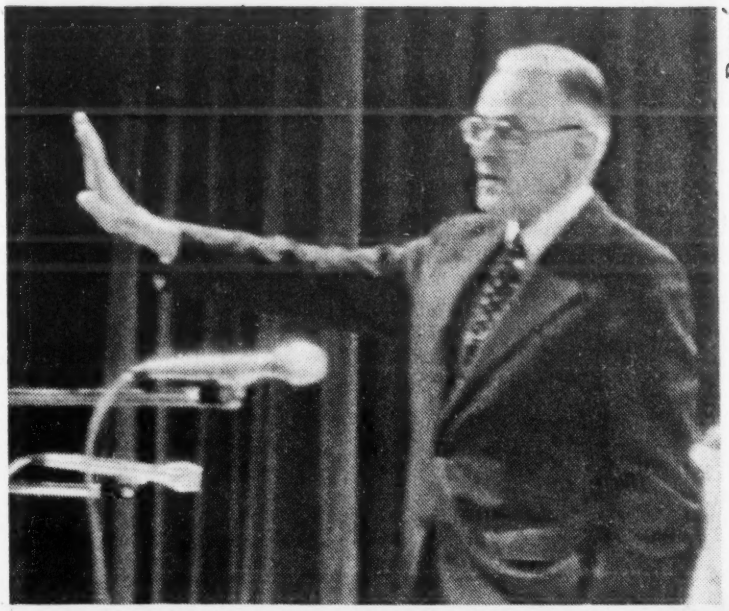
Henry County is a county of little farms now gathered into ever-larger ones or turned out to bushes. There isn't any land in that county that's beneath notice. All of it's potentially good for cropland or for pasture or for forest land. It's probably never been so neglected in its history. You'd have to ask, then, where are the families that used to be on that land? Well, some of them are in professions. Some of them have done extremely well. Some of them are no doubt very glad that they don't have to go back to farm those farms. Some of them are working in factories in the city. Some of them are on welfare – that is, instead of supporting themselves on what we now think of as negligible little farms, they are being supported by us. In the shifting down of people among jobs, some people as a consequence of abandonment of those farms are in the ghettoes. My point is that wherever those people are, they are not as independent now as they were.

About a year ago a young neighbor of mine came to see me. He wanted to talk about buying a farm. He's the son of a tenant farmer who just lately finally got well enough off to buy a little farm for himself. This is a fine boy. I'd had him come help me some. I'd known him since he was a child. He's as cleancut, fine, honest a young man as you'll ever see, done a lot of hard work in his young life. He's married now, got a baby. He was living in a house trailer, growing as much crop every year as he could manage and working in construction. It's a familiar pattern, I'm sure.

Well, he'd seen a vision. He'd seen a little farm, a hilly farm, one of those marginal farms, 100 or so acres. He wanted to live on it. He wanted to buy it. He's a carpenter, he'd fix the house up. He and his family would have a place there. It would be something under foot, you see. It wouldn't be the house trailer. It wouldn't be depreciating.

I knew what he'd seen. I'd seen it myself. I know my forefathers have seen it. How it'd be to have a place of your own and be independent? You know how it is, you walk out, you see a piece of land and you know very quickly how you'd farm it, how it

Butz: Because we spend only 17 percent of take-home pay for food is the reason that nearly 90 percent of our families have an automobile and 96 percent have a TV set.


Dupré

would look if you had it, right? Well, this young fellow had seen that vision. I think it's a grand vision. And an ennobling vision. And an indispensable one. I said, "What does it cost?" "$60,000."

He began to hustle around and see about the little money that he could lay down and what help he could get from his daddy and what help he could get then from the loan agencies and banks. And he'd come and tell me and I'd say, "Find out what the total cost will be after interest." He found that very hard to discover but he finally did. It was twice the amount – $120,000 – and he can't do it.

Well, it was one of the hardest times I'd ever had. With myself. Because I thought from all I knew about this boy that he belonged on a farm – he wanted to be, he knew how to be – and if I was right about his character, he would've deserved to be. And you understand that you have to deserve to be. You have to prove that by being there and doing right on it.

Well, it seems to me that we lost something there. And I'm afraid we gained something. I'm afraid we gained a disillusioned, thwarted citizen who will not try quite so hard again maybe. Now, there're a lot of people like that in this country, who would like to have a piece of it. And we've chosen to keep them from having it.

It's not as though the biggest farm was the most efficient farm. It's beginning to be widely circulated – the news is out – there's a size beyond which size doesn't get any more efficient, and it's possible for small farms to be highly efficient. It depends on how you rate efficiency. If you're talking about efficiency as the output per man per day, maybe high mechanization is the most efficient. If you're talking about the highest output per acre, the smaller operations tend to become the most efficient.

I was driving through Indiana today. I didn't see very many corn fields that had been sowed back to a winter grain crop. That means that there're going to be a lot of days in any year when those fields won't be processing solar energy into something that we can use. Sunlight falling on those fields today was wasted. If the farms were smaller, the crop could be taken off and those fields sowed back. I know it can be done this far north because I was on an Amishman's hillside in Holmes County, Ohio, last year and saw where he'd harvested his corn and shocked it, carried the shocks off the field, and he had a good stand of winter grain. That's the kind of care I'm talking about.

The Amish are doing very well, on a small scale. They're highly productive. They've been putting the money in the bank too, while a lot of mainliners been going out of business.

Somebody told me the other day that out of every thousand dollars of government money that goes to subsidize industry in this country, five dollars goes for agriculture. I don't know. Maybe it's the free enterprise system to subsidize railroads but not farms. For my money, I would subsidize the farm. That's where I would place my tax money. I don't mean in give-away programs either. I mean in programs where price supports would be coupled with production control. Where the public outlay would be for administration. I'd like to provide some low-interest loans for fellows like my young neighbor. I don't think that's giving him an undue advantage. Think of the thousands of dollars we invest in the educations of doctors. You can put a young man on a little farm and educate him and realize a grand increment from that investment.

As I see it, the farmer standing in his field is not simply a component of a production machine. He stands where lots of cultural lines cross. The traditional farmer, that is the farmer who first fed himself off his farm and then fed other people, who farmed with his family, who passed the land on down to people who knew it and had the best reasons to take care of it – that farmer stood at the convergence of traditional values, our values: independence, thrift, stewardship, private property, political liberties, family, marriage, parenthood, neighborhood – values that decline as that farmer is replaced by a technologist whose only standard is efficiency.

Our values have very clearly and markedly declined as the urban industrial values have replaced the old agricultural ones. Private property seems to me to be in a kind of crisis, because how can you expect people to defend the principle if they don't own any of the substance? What's private property to somebody who doesn't have any property? Did we really

Hooper

Butz: In India shortly after the Indians got their independence from Great Britain, one day Gandhi very sagely remarked, "Even God dare not approach a hungry man except in the form of bread." I've seen starving men. No use talking to a man like that about human dignity. No use talking about democracy. No use talking about freedom. He listens only to the man who has a piece of bread. And that is precisely the language we are prepared to speak in the United States.

think that we were going to get people in the cities, who own no land at all, to vote or fight or whatever they're gonna have to do to protect our farms? I don't know why they should, unless we can get clever enough propagandists to brainwash them.

But these values are not native just to small farms, they're native to all small enterprises. And again by policy we've wiped these out – neighborhood grocers, little shoe shops. We have to drive 40 miles now to get our shoes fixed. Maybe you're not supposed to get your shoes fixed any more. Maybe you're supposed to throw them away. I try to get mine fixed.

I think when the traditional people disapper, the traditional values will disappear. How could they survive? The lines of values converge on the traditional small operator, the small man of enterprise. They all diverge from the profiteer. I'm assuming that when I say traditional values everybody knows what I'm talking about – democracy, neighborliness, kindness, and so on. If you're going to be neighborly you have to know your neighbor. You can't be neighborly in a convocation of strangers. It's what lots of people have been telling us for a long time – you can't have these things in the abstract. I don't think that you can love those old values and love what has come to be American agriculture at the same time.

REBUTTALS

Butz: I've got a feeling that Dr. Berry and I haven't met here tonight. Perhaps we won't. Because we are spending $500 a year in health insurance he says there is a crisis in health. I've lived past my life-expectancy when I was born by 30 years. My little granddaughter, two years old, now can expect that extra 30 years. I don't call that much of a crisis. When I was in high school up here at Wawaka, we always expected to have a couple of families out of school sick. You'd go out to see where the kids were and you'd see the sign on the door saying, "Quarantine – diptheria here," or "Smallpox here." You can't find that in this county now – we've wiped it out. We eat better. We're healthier. We're bigger. And of course we spend money for hospital insurance, because we're affluent enough now to afford the hospital. We didn't even have a hospital when I was a kid. I'll take right now beside the old days any day in this health business.

Let's get back to this young boy who wanted to farm, Wendell. I was interested. You were citing a specific case. We stopped at McDonald's out here a while ago. I was standing there at the counter waiting and this young fellow about in his early thirties recognized me. I said, "You a farmer?" "I certainly am," he said. "Where you farm?" "Oh, four - five miles out of town here."

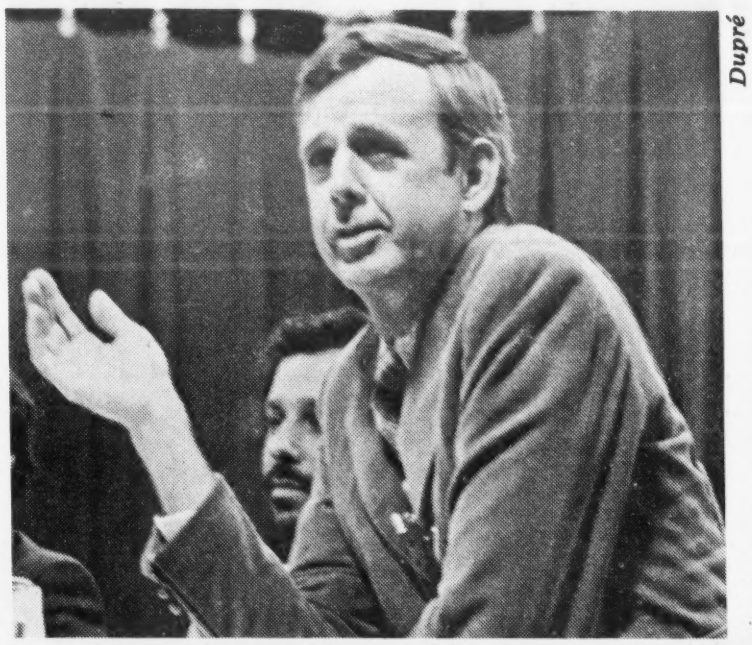
We made some small talk, and I said, "Dad's farm?" "Nope." I said, "Did Dad get you started farming?" "Nope. I started on my own." I said, "How much of it's yours?" He said, "I own 400 acres." I guess he was farming about 600 acres; he said he had two or three landlords. Now that's the other story.

I see that taking place all over America all the time. I know some doctors are buying farms, and that's quite all right. Some farmer's kids are going into medicine, too. But the great bulk of farm purchases is done by farmers who are buying piece by piece, and the great bulk of the landlords in this county are farmers who've retired, or farmer's widows. The percentage of absentee ownership of farm land in Indiana is lower now than it has been for years and years. That's true in America too. Those figures are beyond dispute.

I asked Dr. Berry this evening how big a farm he had, and he said 50 acres. I said, "Do you farm with horses?" He said, "Yes." But you see, Dr. Berry can do that because he has a substantial income as a poet, as a writer, as a professor at the University of Kentucky. He can afford to pay the electric bill – he doesn't have to have kerosene lights. He can afford to have an automobile – he doesn't have to drive a horse and buggy. He can afford to do those things because he takes outside income. Let's never forget that. That's true of many writers who write about such things as he does.

People say, "Butz, you're not for the family farmer." Of course I am. I'm for the family farm to make a decent living for the farm family. I don't want that

Berry: The idea that human beings could starve for want of oil is something new under the sun all right. I won't mind a bit when we go backwards from that, just as an alcoholic oughtn't to mind if he goes backwards from his addiction.



Dupré

family to starve to death slowly. I want that family to be able to enjoy some of the amenities of life — a color TV set, electric lights, indoor toilets. I want them to be able to afford an automobile and a vacation trip once in a while. Now, about saying that if you don't have a piece of farm land, you're not independent, you're not democratic, you don't have an interest in America . . . Don't tell me that the people who live in North Manchester, Indiana, and are home owners, who work somewhere in a factory — don't tell me they don't have a sense of independence. Don't tell me they don't have a sense of community involvement. Don't tell me that they're not responsible citizens, I think more surely than if they were on a small piece of land which was so small as to be uneconomic.

I know you make some trade-offs in this world. You lose some of the old family entity that used to be out there. This is unfortunate, I think. But that's not because you live on a farm or don't live on a farm. That's because we've got automobiles and TV sets and roller skating rinks and that type of thing, and that's just as true of farm kids as it is of city kids. Those TV waves don't respect city limit signs a bit.

We talk about the crisis in culture, "because of no private property." There's a lot of private property in this country. You don't even have to own a house to have private property. We've all got life insurance. We've got interest in America. We've got interest in the very profit process in America.

So I say, when we get to dreaming about yesteryear and the nice things we like to remember about yesteryear, let's set it off against the advantages of what we have. When you do that, the comparison is so obvious that the choice is easy.

Berry: Well, since Mr. Butz referred to my life, which is something I didn't intend to do, I may as well tell you about it. I know a little bit more about it than Mr. Butz. I am a school teacher and a writer. I've written a lot of books, which haven't exactly sold like hotcakes. I may have made a year's salary out of it by now — not a large year's salary. I turned away from the main line of a teaching career. I was living in New York City, and I got a chance to come home and teach in the University of Kentucky. And then I went all the way home, to Henry County where my family, seven generations of my family, have lived and now live — not on the farm I live on, but on the next farm.

I just had 12 acres for a while, most of it steep, and I could hardly have called myself a farmer then. But a developer bought the 40 acres next to me and was going to cover it up with little cottages, without any plumbing or sewage. He did some rather bad bulldozer work on it and made a hideous mess of it and failed. Then I bought him out, and I've spent the last four years restoring that 40 acres. It has been expensive. The land could never have paid for the operation. I paid for it out of my salary. It's productive land now — steep; by modern standards, marginal. It's producing enough cattle now to pay the taxes, and we're taking our subsistence from it.

I should say that subsistence taken off that little farm makes our domestic economy extremely sound. I've done the work with horses. I've done it because I like horses, and because driving horses, I'm independent of the oil companies. I like that. Also, having horses makes economic sense. A good broke team of young mares now brings from $2,000 - $10,000 without any trouble at all. So I don't want any of you all to worry about me, because I farm with horses.

I was wondering how my neighbors were thinking about it until one stopped — an old man — and told me how proud he was of me, and until another stopped just the other day, a young man, and asked me if I could find him a team. He said that he thought he'd cultivate his crops with them and do — one — a better job, and — two — a cheaper job than he could with his tractor. He's right on both counts.

I've done a lot of work. I've gotten a lot of exercise. I've eaten well. I don't feel that I'm the least bit damaged; it hasn't dulled my mind. I was on a panel with the vice-president of John Deere a while back, and he was congratulating himself on the number of people he'd liberated from groveling in the earth in order to use their minds. Well, then I went to New

York, and I saw all those people up there, vomiting in the gutters and passed out in the subways and lying along the street, and I said, "Uh-huh. This is what people do when they're liberated to use their minds." I was delighted to find that out.

Now, Mr. Butz has given you a lot of quantitative arguments. Let me just take a few of them. We may never meet, because he's arguing from quantities and I'm arguing from values. Life expectancy is not a value in and of itself. Some things, our tradition tells us, are worse than death — among them, too long a life and bad circumstances. Quality of life has to do with morals and with spiritual good health. It doesn't necessarily have to do with a flush toilet.

One thing I do on my farm is use a composting outhouse. One of the most damaging things we've got in this country is the flush toilet. The nutrients of the earth that we eat pass through our bodies, and according to the laws of biology, if the land is to stay in good health, those nutrients have to go back on it. We use millions and millions of dollars worth of soil nutrients that we eat and then put into the rivers to become pollution, and then spend millions of dollars purifying it again to drink it. It doesn't make any sense. If we ran our own households on that kind of an economy, people would think we were stupid. Suppose you put a pump in your septic tank, ran the effluent through an expensive processing system, and then drank it. You'd have people in white coats at your front door. But this is the way this whole society works.

Independence? If you've got your own land, you're sure as hell independent if you grow your food from it. You won't be starved by a shortage of oil. The idea that human beings could starve for want of oil is something new under the sun all right. I won't mind a bit when we go backwards from that, just as an alcoholic oughtn't to mind if he goes backwards from his addiction.

There's a lot of private property, Mr. Butz says, in insurance policies in America. Those are abstract. I don't love my insurance policy. But I sure love my farm. I haven't laid awake at night thinking about my insurance policy. Lord god, I hope I never do lie awake at night thinking about it. I hope I never depend on it.

Mr. Butz has made two references to this nice schoolhouse. This one here, has it got a skylight in it? School takes place in the day time. Modern educators don't know it. They've never been out of their air-conditioned solid-walled offices long enough to find out that school still takes place mostly in the day time. You'd think that to save the taxpayers' money — everybody's aching to save the taxpayers' money — that some of these people'd build a school with a window or a skylight in it. It's same as with agriculture. We've based it on petroleum. We've based it on industry. Mr. Butz says, 70 people are being fed by one farmer. One farmer plus how many truck drivers, middle men, packagers, processors, precookers, road builders, oil companies, employees, how many? That's a sheer . . . It's misleading, is what it is.

Hooper

I don't ask that my values be adopted over night, and a bunch of people who've never farmed move to the country. What I'm advocating is a change of values, and I assume that changes of behavior will follow changes of values.

QUESTIONS

Question about the young man who inquired about buying a team. (Questions were indistinct in the tape, so they'll be paraphrased.)

Berry: He's not stupid, and he doesn't have 600 acres. He raises some tobacco, and even with the tractor, that's very slow work, cultivating tobacco. I don't know if you've ever used a two-horse riding cultivator. It's the best cultivating tool that was ever made, as far as I know.

Question about the Amish.

Berry: Well, they're still doing very well farming with horses. They're doing well by cooperating in neighborhoods, as a lot of people used to. I don't know how old you are, but probably not old enough to remember when people used to get together and work, but they did. They still do in my part of the country. There's something to be said for the value of people helping each other, don't you think? I don't think that anybody's going to get to heaven by being efficient. I don't think St. Peter, when he meets us up there, he's going to ask a single one of us how efficient we were. I think he's gonna ask us, did we help our neighbors. And I think in our hearts that's what we ask ourselves. If we're going to trade the possibility of working with our neighbors for a four-row cultivator, I think we've made a bad trade. I like working with my neighbors. We talk to each other. Most of the stuff I know that I really enjoy knowing is from listening to my neighbors talk when we work together.

Voice: You can't go backwards.

Berry: I'm not talking about going backwards in history, I'm talking about going backwards in character.

Question about a lot of new people getting into farms.

Berry: People who're buying agricultural land now are city people – doctors and lawyers and businessmen of various kinds. They are able to pay the costs and the high interest rates and they get as a reward a place to come out to with their friends on the weekends. They make some of the worst neighbors that history has ever known.

One thing I've been fascinated with recently is watching some of the city people who come to the farm and are trying to learn how to farm. It takes longer than I thought it would. It gives you some sense of what a complex thing a farmer's mind is.

Berry: I don't think it can happen very quickly. One thing I've been fascinated with recently is watching some of the city people who come to the farm and are trying to learn how to farm. It takes longer than I thought it would. To look at this happen gives you some sense of what a complex thing a farmer's mind is. I don't think I appreciated it enough, although I appreciated it a good deal. It'll take a long time to get those people established and well off. What would you say, you farmers? It takes five years for a farmer to learn to use a new farm, learn the condition of it and how to get along on it. Never learn? I understand what you mean.

Question about limits to the trend of fewer farmers.

Butz: Obviously there is an irreducible minimum and we are approaching that. Right now we've got, by the census definition, 2.8 million farms in the United States. On over half of those, however, the operator makes more money off the farm than he does on the farm – he's a Wendell Berry. They're really rural residents who have some of the things that Dr. Berry's talking about here tonight. Approximately 600,000 farms in the United States produce better than 80% of our commercial farm products. There won't be much more reduction.

Voice: If farmers are so important in the world, why don't more people listen to us?

Butz: It's a good question. I know we're in some economic stress right now, depending somewhat on the kind of farming you're in. In Iowa the other day I asked this farmer, "How's your cash flow?" He said, "My cash flow is pretty good, the trouble is I ain't stopping none of it." Well, why don't more people listen to you? I think in the current political situation, it wasn't farmers that elected Mr. Carter. I'm sure he must have gotten up the morning after the election, looked at the map of the United States, and he saw everything west of the Mississippi, plus Illinois, Indiana, and Michigan, colored the wrong color. He must have decided, "Nuts to those birds, they're not the guys who elected me. I'll take care of labor with the higher minimum wages and the cargo preference bill, I'll take care of people for free food-stamps for everybody." I guess it's just a matter of paying those that took care of you.

Berry: I'd like to answer that question too. I think they don't listen to farmers because there aren't enough of you. You're a negligible quantity, politically. I don't see how you're going to protect yourselves without some friends in the cities, and I don't know how you're going to get them. You see, this is the split that I'm talking about. You're feeding people who are not interested in raising food, they're interested in eating it. So when you've got a declining small population in which nobody is interested, I don't see how you stop it at an irreducible minimum. It seems to me that farmers are in rapid precipitous decline, they're without political friends, and I don't see how they can do anything except expect to decline some more. Unless values change.

Question about how we get more people on the land.

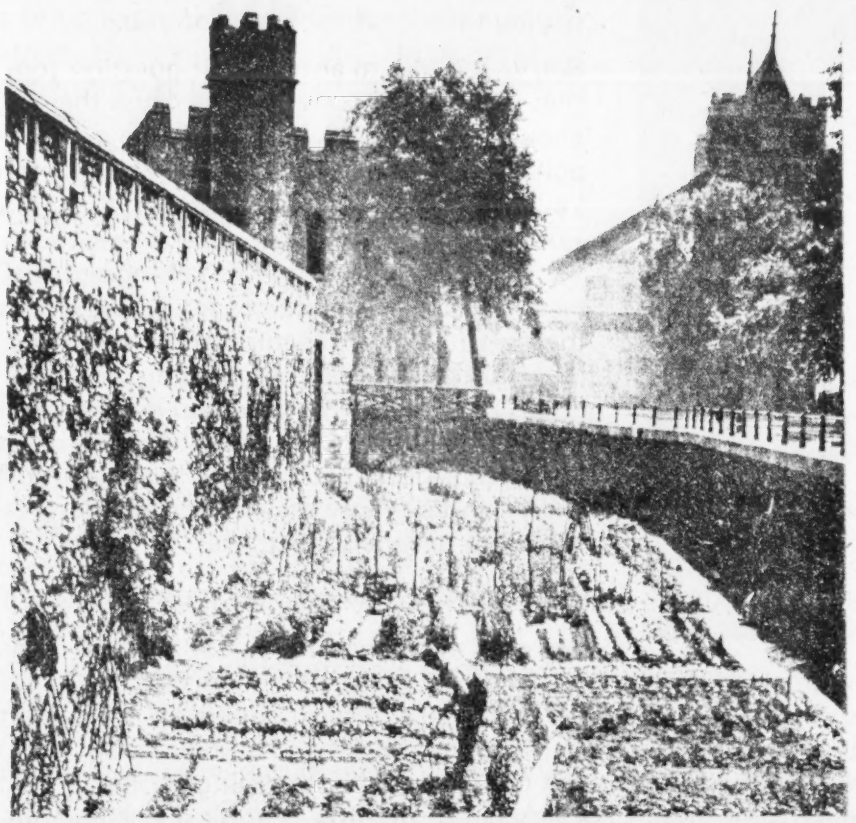
Berry: I think that more people ought to be able to buy it. I was interested in what Mr. Butz said about the prevalence of farm buyers on the market. It seems to me that when we think about land prices and the income that's coming off the land, it's not a very good situation. People are selling out of farming at a great rate. It seems to me that the way the land is priced and the way interest is going, it's getting more and more likely that non-farmers are going to buy the land. And it doesn't seem to me to violate good sense in any way, or good economics either, to take steps through tax benefits to young beginning farmers and through low-interest loans.

Question about how serious the consequences of the current agricultural situation are.

Berry: One thing I think you've got to have your eye on is the young people. My farm is a very negligible operation in Mr. Butz's terms, but one of the increments I've had from it is that when my kids have been home I've had something for them to do. They've been surrounded by a complex structure that they had to understand before they could work in it, and working in it taught them something about the complexity of it and the way it depended on them. They have some kind of sense of responsibility. I don't have a TV and so my kids have been thrown back on books a little bit.

What my kids have had, I'm beginning to see now that the oldest one's getting away from home. What they have – that I think is running pretty short in this country – is the capacity to entertain themselves. They don't get bored if somebody's not putting on a show for them.

A lot of kids now are getting credit cards and charge accounts at stores. And you know what they're doing? They're going to those stores and stealing stuff, to amuse themselves. In my classes, it's getting harder and harder to talk about traditional values now. It's getting awful hard to find a kid who's ever run into the 23rd Psalm. I asked my class the other day, "How many of you have read Tom Sawyer?" Not a soul. So, you've got color TV, charge accounts, new cars, no work, and you've lost Mark Twain. I think it's a bad bargain. ■



Gardens in European cities use space with great efficiency and add a finely cared-for ambience to their locales.

BIOLOGICAL AGRICULTURE IN EUROPE

BY GIL FRIEND

IT'S EASY to romanticize small farmers. The Jeffersonian ideal of a nation of small holders still has vitality in this culture, even as those small holders are steadily driven out of business by the economic forces of that same culture. It's harder to avoid romanticization when the farmers are small organic producers bucking the tide of agricultural chemicalization and consolidation. And harder still when the farm overlooks a breathtaking valley in the Austrian Tyrol, on a slope so steep that eroded soil must be carried up from the valley floor each year to the fields above, while, we were told, farmers have to wear crampons when they work certain fields to keep from following that soil down the side of the mountain.

Unavoidably, we did romanticize them — we being two dozen and a few more Americans on a whirlwind three-week four country tour of "biological agriculture"* in Europe, sponsored by the Small Farm Research Association. We also learned enough to respect them, and to be inspired by what they are achieving, and by the potential their experience offers agriculture in the United States.

The farmers themselves are not blind to the romance. Pierre Carre and his son Michel farm 35 acres of fruits, vegetables, and grains in central France. Three signs grace their packing shed, along with the crates of "biologique" apples and pears and carrots:

Falsehood does not become truth just because it is propagated.

— Gandhi

The health of man is a reflection of the health of the earth.

— Heraclitus, 540 B.C.

No human activity, not even medicine, has as much importance for health as does agriculture.

— Prof. Delbert

Like many of the farmers we visited during our swing through France, West Germany, Austria, and Switzerland, the Carre's are husbanding their culture as well as their land. We visited over a dozen of these "born again" farmers, and a sense of mission was common to them all, though few were as socially active with it as the Carre's, who hold frequent community workshops at their farm. They had all been the chemical route, following advice from government advisors and agro-chemical companies until something — declining yields, poor animal health, persistent friends or spouses — persuaded them to stop and change their vision and their practices. They have seen the difference in the productivity and health of their land and their stock, and it is those concrete differences that have been the basis for their fervor. And, not incidentally, their financial success.

FARMING is good business in Europe these days. The issue of organic vs. chemical approaches aside, it is easier to be a financially successful farmer in Europe than in the U.S., though many of the same pressures exist. A variety of state-maintained benefits — low interest agricultural loans, tax credits, price supports and import barriers — make it possible for

Gil Friend is not farming at present, but wishes he was. A founder of the Institute for Local Self Reliance, he now lives in Berkeley, California, where he works on ecologically rational neighborhood development. His hunch is that the high price paid for the urban freeway culture many of us know and loathe is related to a disconnection from our basic life support systems. His goal is to integrate the two.

At a time when large farms in America are going broke, small farms in Europe aren't. The two cases are obviously not identical, but the differences are instructive. As in most enterprises, the single most important decision to be made is selecting the appropriate scale. *— Richard Nilsen*

* "Biological" agriculture is, admittedly, no better a name than "organic" agriculture: all agriculture deals with biology, and DDT is an organic chemical. But biological is how the Europeans refer to this vision and body of technique, and they're making an important point. Biological farming is not just negative avoidance of the use of synthetic chemicals, but a positive focus on the living resources of the farm in general, and on the biological activity of the soil community in particular. While the conventional farmer will use precise chemical tools to achieve specific results, the biological farmer will work to build the overall health of the soil community, believing that is the most effective way to achieve the desired specific results durably through the rest of the farm system.

Rotations are such a basic component of biological agriculture that one French advisor tells farmers, "If you're not willing to introduce rotations, forget about biological farming." This farm in Switzerland uses a fairly typical seven year rotation: one year each of wheat (followed the same season by a green manure of vetch, oats, peas, and rape), potatoes, vegetables, and barley; and three years of pasture, the precise composition of which will vary with the particular field. Vegetable and pasture sections of this rotation are shown here. Other rotations included a 13 - 15 year pattern at a French goat dairy — where species diversity in the pasture was greatly increased in the absence of chemical fertilizers — and a three year cycle in a small urban market garden.

the family farm to earn more money on less acreage than would be imaginable in the U.S. A recent **New York Times** article described a West German dairy and beef operation which netted $20,000 from 137 acres. American farms average three times that acreage, but often produce far less income. Stories of farmers in this country worth a half million dollars on paper and netting $5,000 a year have been common fare in the recent press.

But the biological farmers have a further advantage. They simply don't have to spend as much on fertilizers and pesticides. With yields roughly comparable to other farmers,' and lower input costs (though often higher labor requirements), the incomes of biological farmers are essentially equal to or slightly higher than that of their chemical using neighbors, as research in both Europe and the U.S. has confirmed. One German farmer we visited maintained that his production of dairy, wheat and potatoes has been yielding him three times the national average income per acre. (His department of agriculture is convinced he secretly spreads chemical fertilizer at night.) Most of the farmers, though, stressed the improved overall health of their operations rather than a distinct financial advantage.

Though it is admittedly difficult to understand social context from a whirlwind tour, it seems that agriculture in Europe is in a healthier position culturally, as well as economically, than in the U.S. Cultural factors have probably contributed a great deal to the success of biological agriculture in Europe. Europe has simply not come as far along the road of modernization, specialization, and rationalization as agri-business has managed to drag the U.S. The frontier mentality is absent; the land has been farmed a long, long time, often for hundreds of years by the same family. Perhaps continuity breeds respect.

Europeans are still used to fresh food and seem to care about its quality. Market gardens border many cities, providing employment as well as fresh vegetables. Farmers' markets are still a common weekly feature in many cities, providing a basis for direct and personal producer consumer relationships. Of course, what seemed to us a thriving market garden sector is but a shadow of what used to be in Europe. One-sixth of the area of Paris was market gardens a century ago, nourished and heated with manure from the city's then ample horse population. But even this shadow is a glowing example of what could be in the United States.

[more→]

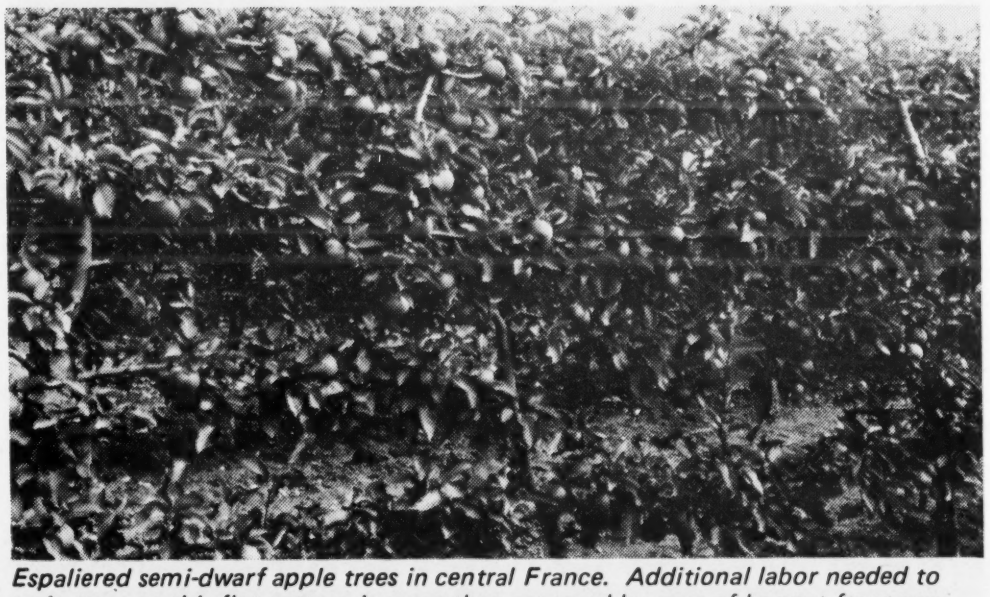
Green manures are an integral part of all rotations, adding organic matter to the soil, and maintaining soil cover between other crops. This pasture, at the Federal Institute of Biological Agriculture in Switzerland, includes lush growth of vetch, rye, clover, and peas, and will provide green chop for cattle, then be disced into the soil surface layers. Looks good enough to eat.

Europe is a community gardener's dream. They are everywhere. Some are miniature cities, with dozens of brightly painted tool sheds among the vegetables and flowers. Some look just like the community gardens we know. And some are inventively crammed into whatever space there is — a public square, a railroad right-of-way, a factory front yard. One industrial plant even grazed sheep on its lawn.

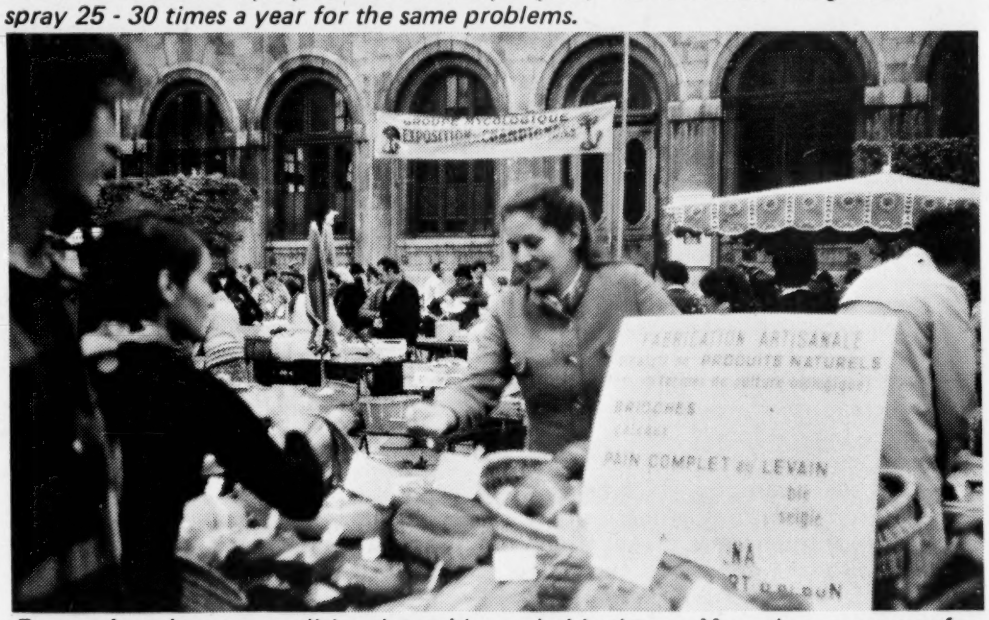
The cultural difference between European and American food systems which struck me most dramatically, though, was the organization of rural communities. Fly over American rural countryside, and you will see individual houses surrounded by tracts of land, with an occasional town. Do the same over much of France, for example, and the landscape is quite different: clusters of buildings in small towns surrounded by a mass of fields, then another town and more fields, and so on. Farmers commonly live in town, and commute perhaps a mile or two to their fields each day, or to the several fields they rent around town. In other cases, the houses from a number of holdings are clustered together at a common corner or edge, so the family lives both on its own land and in a small community. This may be a natural outcome of small farm size. A house even in the middle of a 50-acre parcel is obviously closer to the neighbors than one in the middle of a 300 or 600 or 1,000 acre tract. Whatever the reason, one immediately notices the contrast with the isolation of the American farmstead. In Europe people are often both farmers and villagers, not sacrificing the social matrix for the biological.

THE FARMS we visited during our three week VW bus caravan were remarkably diverse — a one acre market garden in Orleans, a 100 acre diversified research farm near Basel, Switzerland, intensive espaliered fruit orchards in central France, high Alpine dairy operations in the Tyrol, and a goat dairy and wild boar ranch near the Rhine. There was great diversity contained within each enterprise as well. This diversity was one of several important common features that turned up again and again on most of the farms we saw, whatever variation of biological agriculture they practiced.

The Carre's orchards adjoined their meticulous vegetable fields, while nearby was pasture for their working horses. The Mahler farm, overlooking a large lake in central Switzerland, produced organic market vegetables — sold by a large cooperative supermarket chain at the same price as conventional vegetables — milk, grains for bread and feed, and pasture for the animals, as well as sufficient manure to maintain the balance of the soil. Almost without exception, each enterprise included livestock. And without exception, the animals' manure was of central value — as important to the success of the operation as the marketed animal products themselves.



Espaliered semi-dwarf apple trees in central France. Additional labor needed to train trees to this flat pattern is more than returned by ease of harvest from easy access to fruits, as well as increased yields. Trees are slow to bear, but long lived. Orchardists have found totally "organic" techniques impossible as yet, and use limited applications of synthetic chemical pesticides against coddling moths and mites. This orchard sprays about 8 times per year; "conventional" neighbors spray 25 - 30 times a year for the same problems.



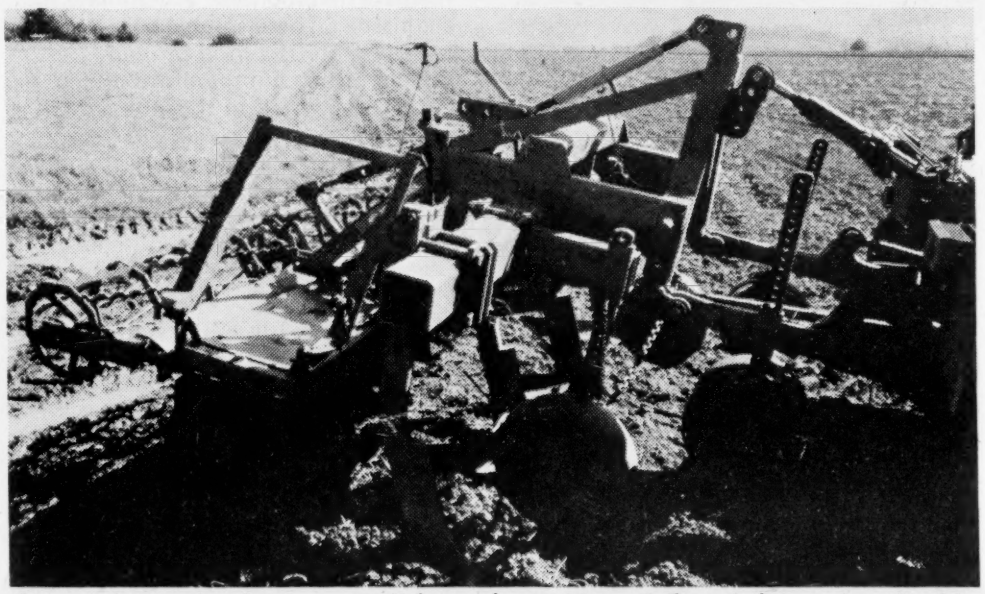
Farmers' markets are traditional, weekly, and ubiquitous. More than a source of fresh food, they provide a basis for direct and healthy producer/consumer relations. For example, at about the same time that a housewife and a farmer sneered at each other across a fence on the cover of Time *magazine during the recent beef boycott, loyal customers of a biodynamic market garden near Stuttgart came up with over $400,000 to keep the garden from losing its rented land to developers.*

Though it may have more to do with U.S./Europe than organic/chemical differences, we noted that dairy herds, like the farms themselves, were small. A typical herd included only 20 - 30 cows, with a few operations milking only five to seven cows (these, though, typically captured value added by producing and selling cheese). We didn't see the large, capital intensive dairying pattern that has broken the financial back of many small American dairy operations. Rather than expand to "modernize," as many American dairymen were persuaded to do in the 1950s, these farmers have found an appropriate scale, and an appropriate degree of mechanization. They might gross more with a larger herd, but might net no more, or even less.

There are other reasons for small herd size, of course. Land holdings are still small enough by U.S. standards (the "bigger is better" trend is not absent from Europe, but it did have a later start), to limit the number of head that can be supported without imported feed. Any imported feed is an added expense, and "biologically raised" feed is difficult to get at all. In addition, milk prices are state supported at levels slightly above U.S. average prices even though there is a glut of milk in Western Europe.

BEYOND the basic commitment among biological farmers to return organic wastes to the soil, there are differences of opinion on just how to do it. These differences are the major distinguishing feature between the several branches of the biological agriculture movement in Europe. Quite a bit of structure has grown up around each different approach — farm advisor services, both for the transition from chemicals to organics (often a difficult period, though not always) and for ongoing management certification programs, cooperative

Leeks and hi-rises. This 1.1 acre market garden on the edge of Orleans, which provides primary livelihood for one family and vegetables for many, is aided by a property tax exemption for food producers with less than one hectare (2.47 acres). A variety of state policies — price supports, protective tariffs, and low interest loans, as well as tax benefits — help maintain small farming as a viable way to make a living in Europe. Agribusiness threats exist, but are not as advanced as in the U.S.



Appropriate technology — a small farmer's combine. A French farmer bought this 6-foot combine for $500, restored it to working order, and uses it to harvest grain, clover, and alfalfa seed on his 30 acre vegetable and dairy operation. The combine wraps around the tractor that propells it. Power take off shaft is visible at rear.

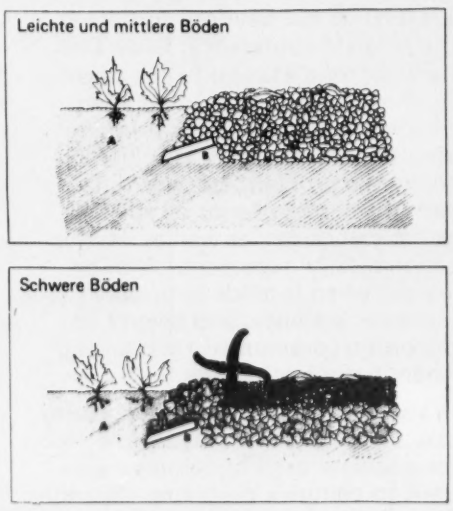
marketing of products, wholesale supply of inputs like rock powders and in some cases continuing research programs. Manure application rates vary, but are commonly in the range of 5-15 tons per acre.

Animal manure though is only one part of biological soil management. Green manures are widely used in all methods. Hardy Vogtmann, secretary of the International Federation of Organic Agriculture Movements (IFOAM), stresses the importance of keeping the soil surface covered as much of the time as possible. Vogtmann will sow a green manure after a main crop or under it to reduce soil erosion, outcompete weeds, and add organic matter to the soil.

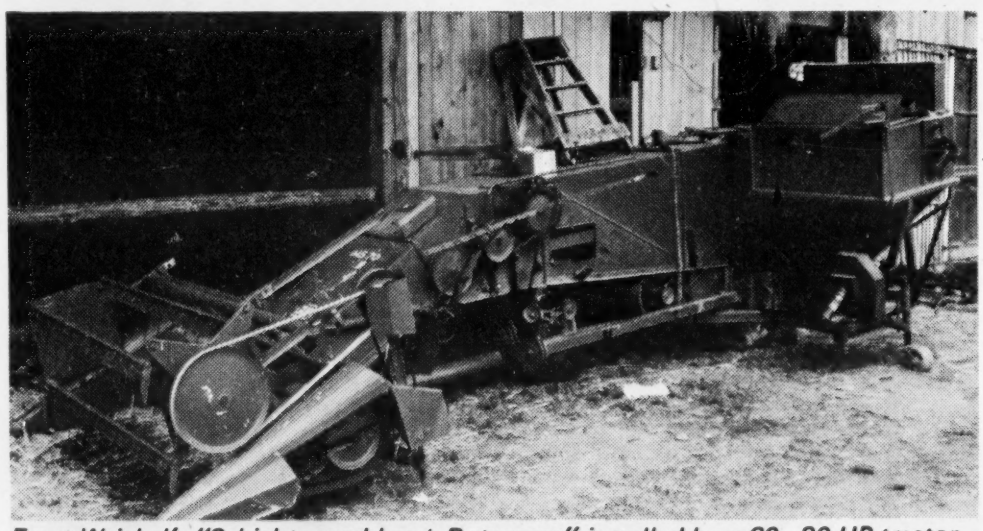
Soil ammendments are also important. Basalt is the most common mineral used, though a blend of granite, gneiss, porphyry, and dolomite is also popular. These are either spread directly on the fields at rates up to 500 pounds per acre or are applied indirectly by sprinkling on manure in the barn or even feeding to the livestock. Both of these latter techniques are said to thicken the manure, to reduce nitrogen loss (without the harmful effects of using superphosphate for the same purpose) and to reduce fly and odor problems.

Preserving the vitality of the life processes of the soil, for most biolog cal farmers, also means preserving natural soil stratification — a litter layer at the surface with extensive microbial activity; a "humus layer," rich in organic matter but with reduced microbial activity except near root surfaces; and a less rich and still less active subsoil layer. Tillage practice attempts to keep most of the decaying organic matter near the soil surface, as it would be in natural woodland, where it can decompose most effectively. The moldboard plow is still used for extremely heavy soils, but even then is seen as a temporary expe-

Das ist die richtige Bodenbearbeitung



A = Ungelockerter Boden
B = Lockerungsschare
C = Gelockerter Boden



Ernst Weichel's "Schichtengrubber + Rotoregge" is pulled by a 60 - 80 HP tractor, costs about 8,000 DM (or $3,500) complete, or a little less than half that without the roto-tiller units. Designed to prepare a seedbed in one pass (saving energy and preventing soil compaction) it has chisels that penetrate 18 inches to loosen the soil without inverting the layers, and roto-tillers and rotating levellers to prepare a uniform bed. The soil surface sits about three inches higher after one pass. Designed specifically to imitate the effect achieved by hand "double-digging," Weichel calls it "the best machine available for biological agriculture."

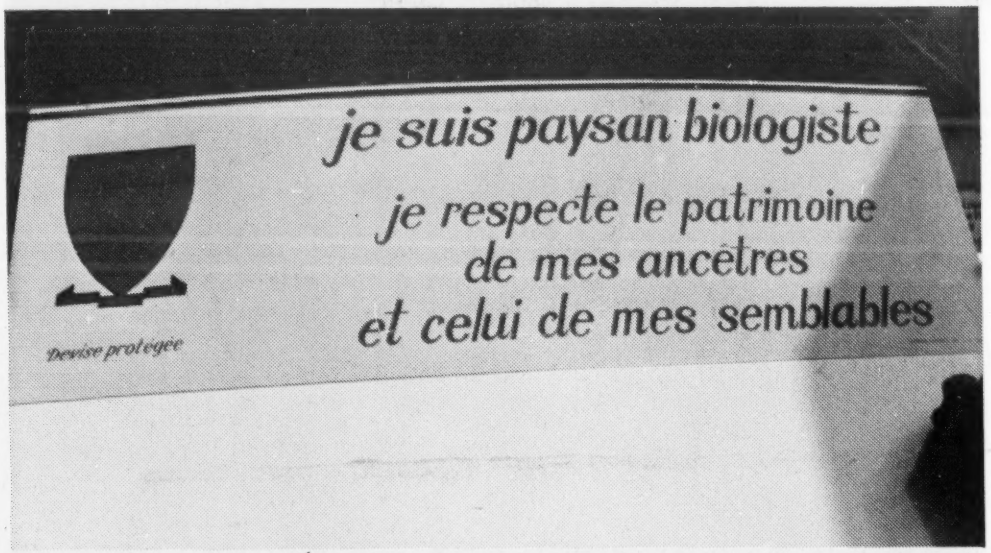
dient, to be used until the soil is sufficiently restructured by rotations and other practices so that the plow can be put aside in favor of "less violent" tools. Discs, chisel plows, and harrows are the preferred implements.

Some are not satisfied with them, however. Ernst Weichel, an industrialist based near Stuttgart, has been developing a line of equipment specifically designed to meet the needs of biological farming. Herr Weichel is not much interested in small-is-beautiful, even less in hand or animal labor. (Most of the Europeans, in fact, were amused at young Americans' fascination with scythes and other hand tools that the farmers themselves have been happy to leave behind. The farms we saw were, as a rule, well mechanized, though with smaller tractors than are common in the U.S.; what scythes there were usually served more as mementoes than tools, though some farmers still relied on them for special jobs.) Weichel is looking for the productivity gains of mechanization without the abuse of the soil that previous farm machinery has inflicted.

ORGANIC agriculture proponents, seeming to speak out of both sides of their mouths, have long maintained that farm animals *prefer* organic feeds because they are healthier and yet have also maintained that insects *avoid* eating organic crops. For neither of these seemingly contradictory assertions was an adequate mechanism proposed. Now a French entomologist may have one.

Speaking at the first research conference of the International Federation of Organic Agriculture Movements (IFOAM) in Switzerland last October, Francois Chaboussou presented evidence of the effects of soil nutrient imbalance and pesticide stress on protein synthesis in plant tissue. Under optimum conditions, Chaboussou maintains, protein synthesis is maximized, but when the plant is stressed, less complex, more soluble "intermediate metabolites" accumulate in the tissue. These soluble substances are the preferred food of many pest insects, which are therefore preferentially attracted to the stressed plants. The specific mix of pest populations, according to his experiments, may be variably affected by the particular nutrient imbalance and pesticide used. Chaboussou's conclusions were much the same as the farmers' basic practice of "feed the soil and don't worry about the pests" – a balanced organic soil management program will greatly reduce insect pest problems.

The elimination of pesticides in itself can in many cases reduce pest problems, which may be the main reason most of these farmers don't feel they have problems. Without spraying, natural populations of predatory and parasitic insects build up and exert effective control on pest populations. Conversely, pesticide use reinforces a dependency on continued pesticide use; as the poison wears off, pest populations rebound without natural enemies to keep them in check. It functions much like an addiction.



This window sticker on the car of a French organic farmer says: "I am a biological farmer. I respect the heritage of my ancestors and that of my peers."

This silage dolly on a dairy in southern Germany represents the intermediate scale between a silage fork and a front-end loader. Push the dolly into the pile, raise the handle to close the jaws, and wheel it away to your livestock.

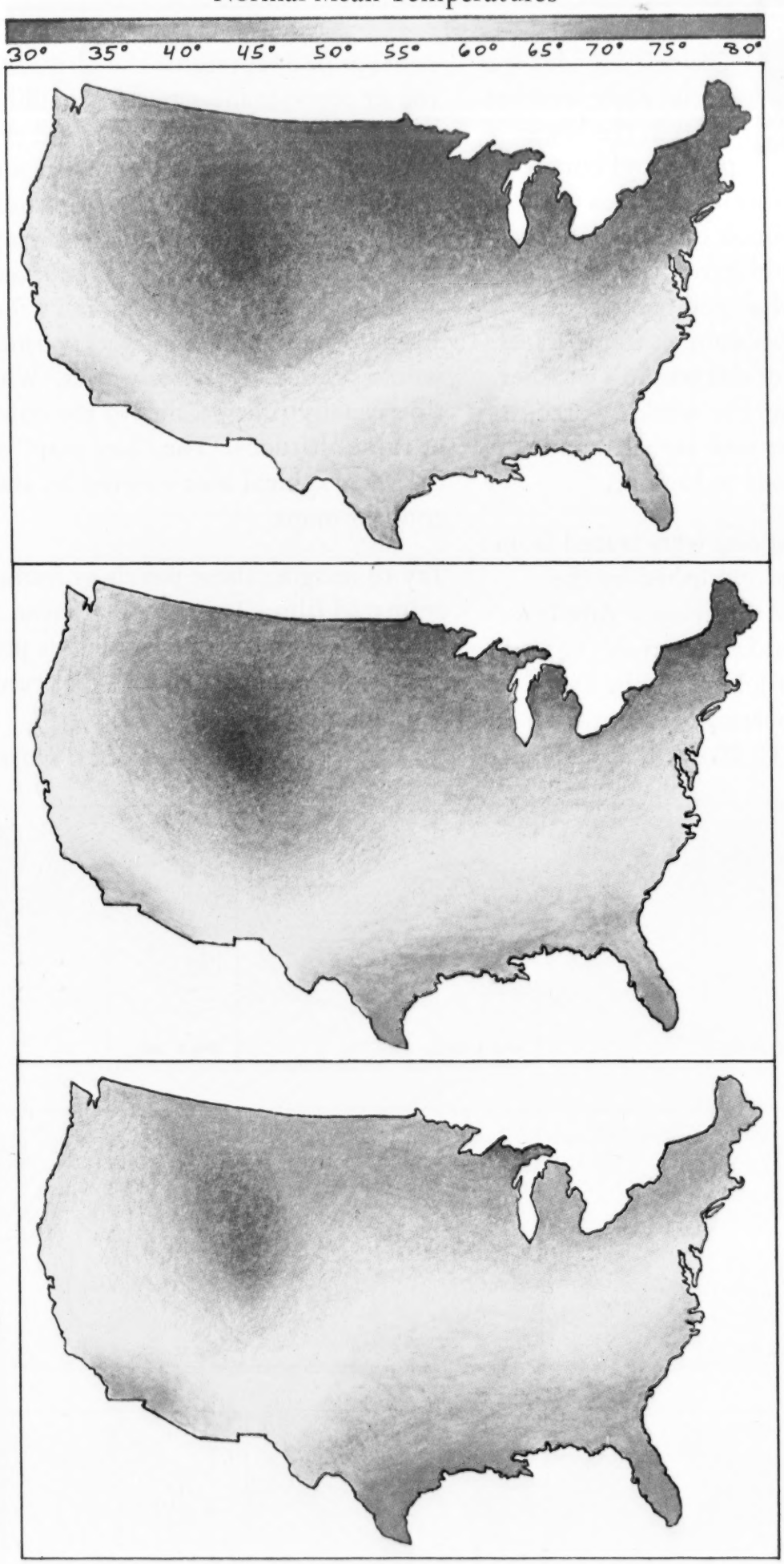
The beets in this field on Weichel's farm were sown in a seedbed prepared by his three-stage tillage unit. The result is a mechanized version of the French-intensive raised bed. This field was mechanically cultivated up to the point where the densely planted beets began to spread their leafy canopy and simply out-compete the weeds.

DURING her keynote address at the IFOAM conference, Lady Eve Balfour, long a leader in the organic farming movement, quoted Aldo Leopold: "We must quit thinking about decent land use as solely an economic problem, but examine each question in terms of what is esthetically right, as well as what is economically expedient. A thing is right when it tends to preserve integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."

In some ways biological agriculture may be an unacceptably simple vision for a society used to complex solutions to complex problems. But the Chinese have a word for it (somehow they always do). The expression for "ecology" in Chinese, I am told, is *hsin t'u wu chi*. Body Earth not two. ■

The Comi of Sprin 1977

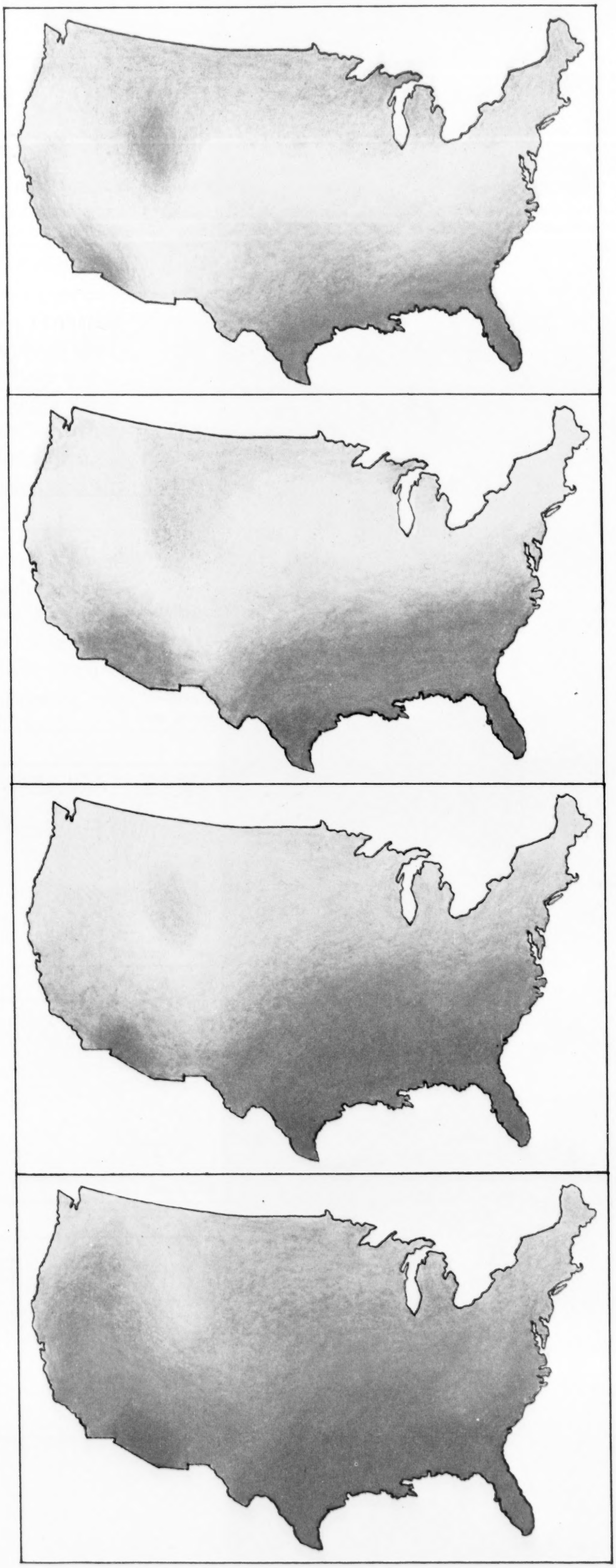
by Robert Horv



Based on data contained in the *Climatic Atlas of the United States*

The ming of pring 1977

obert Horvitz



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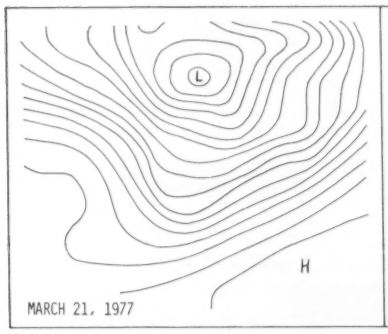
May 28 - June 3

June 11-17



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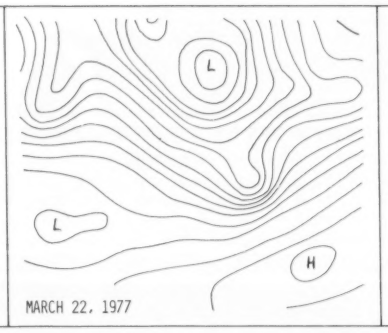

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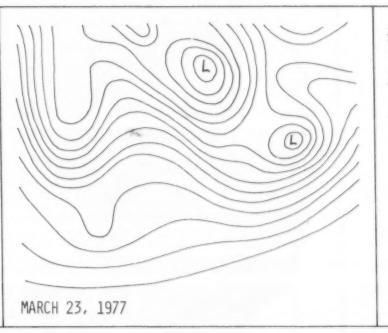

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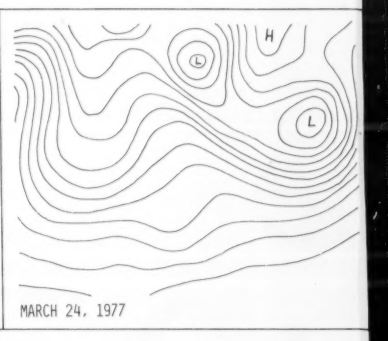

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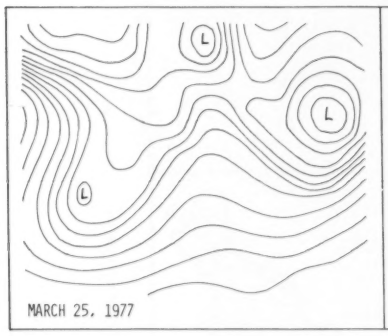

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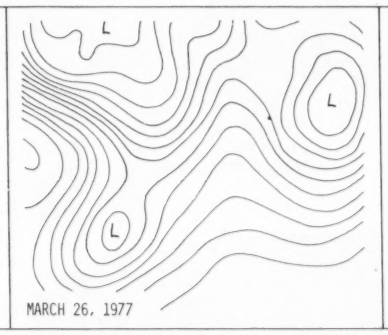

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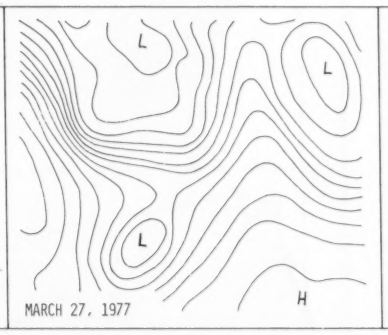

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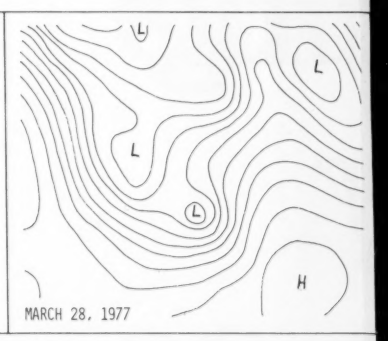

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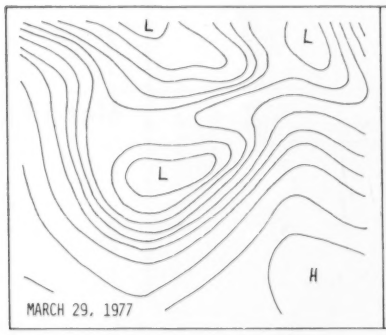

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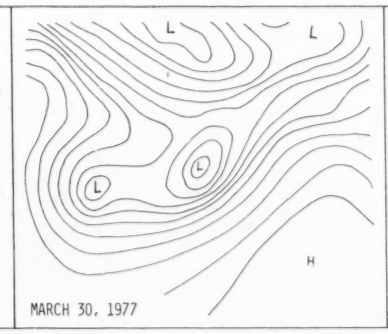

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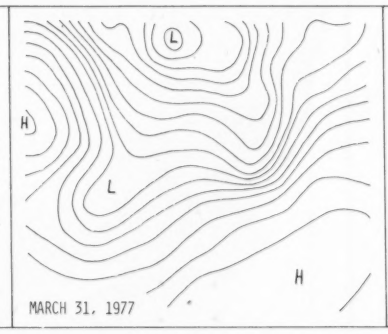

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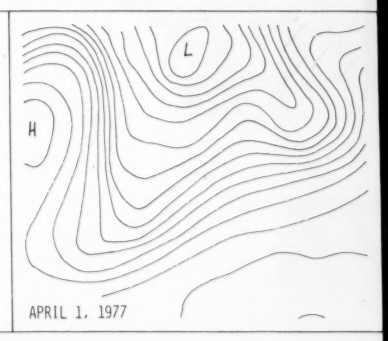

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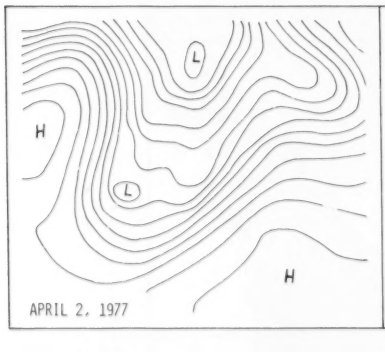

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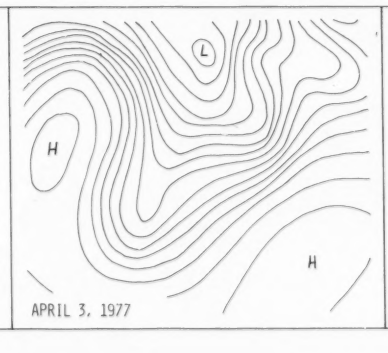

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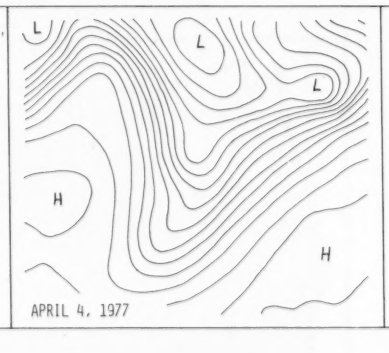

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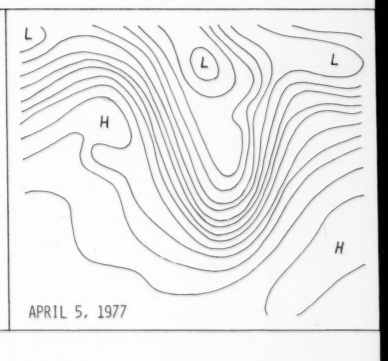

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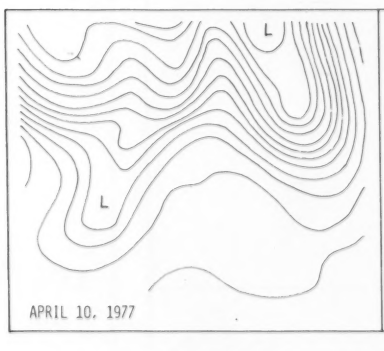

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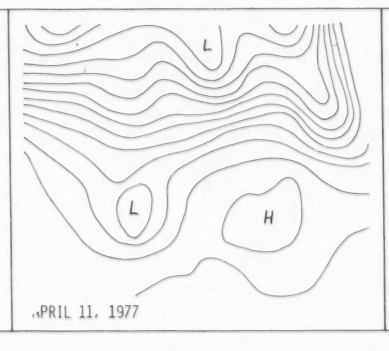

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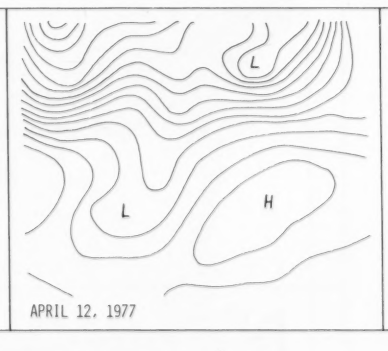

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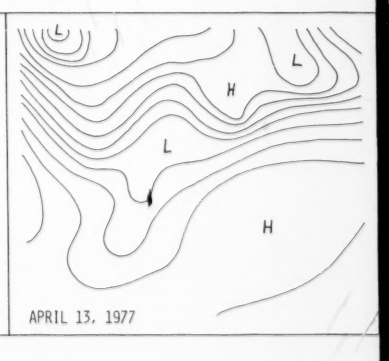

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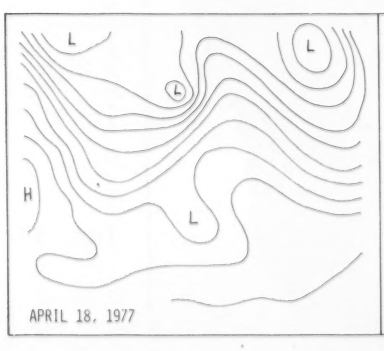

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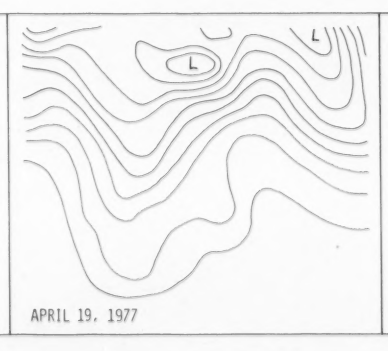

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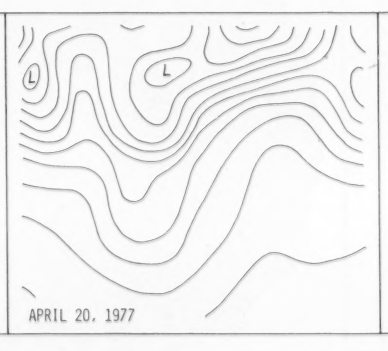

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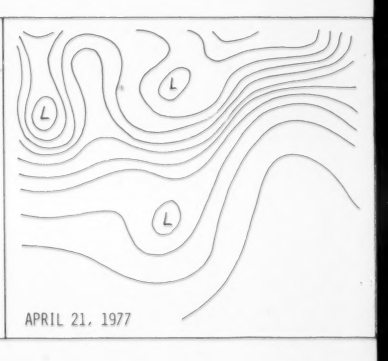

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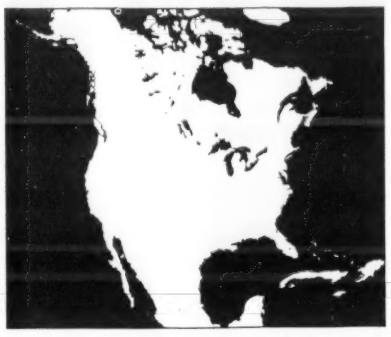


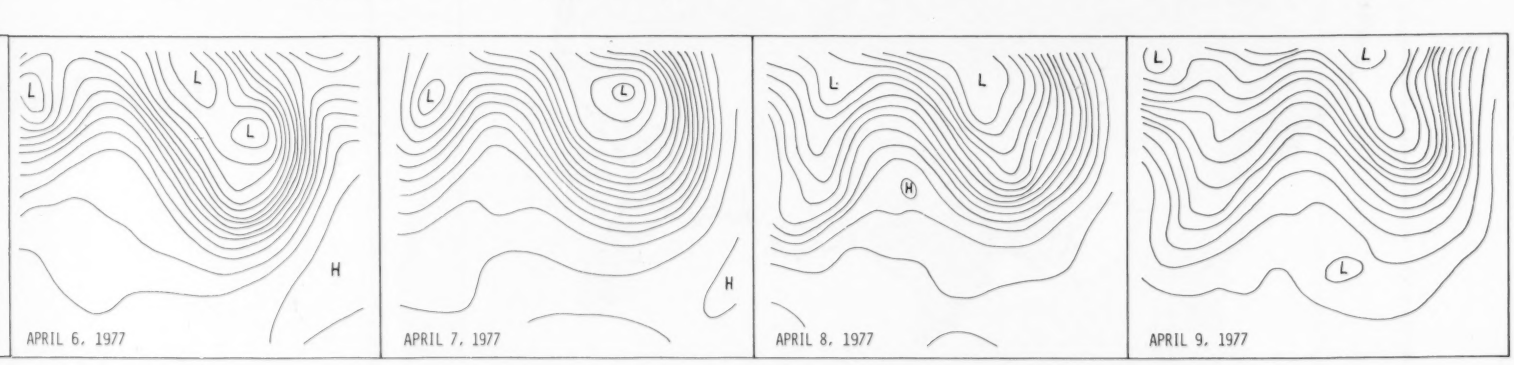
The Coming of Spring, 1977

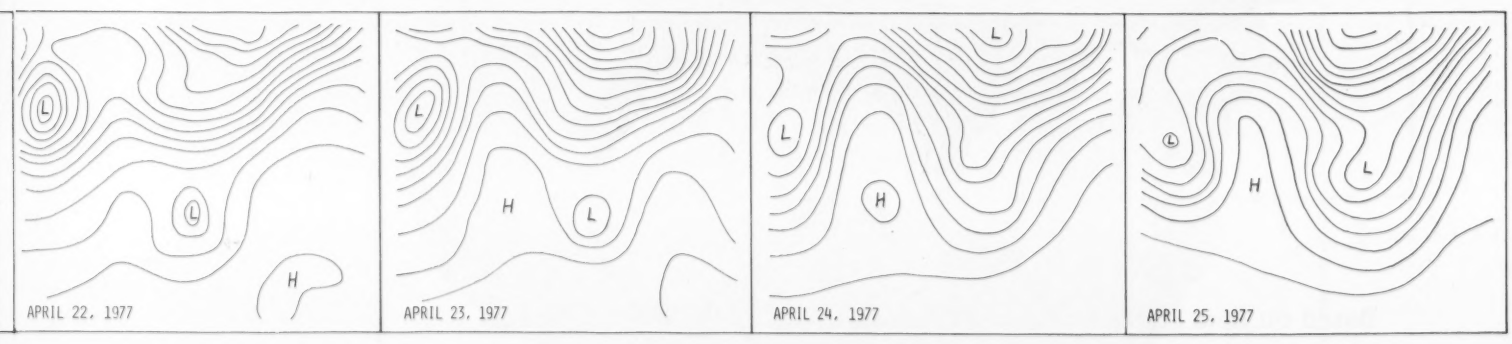
The original idea was to run daily weather maps in the lower right-hand corner of every right-hand page throughout this entire issue – to create a flip-book of Gaia's constant sighing – but that would have disrupted the layout too much, so what you see here is a scaled-down version, just enough to get a feel for the basic dynamics of this season's weather. I found that after about five weeks' worth, the principles are pretty well revealed and any more just made it tedious to look at.

These maps from last spring were traced from the **Daily Weather Maps** published by the National Oceanic and Atmospheric Administration's Environmental Data Service (annual subscription $16.50, from the Public Documents Department, Government Printing Office, Washington, D.C. 20402). Each contour line represents the altitude at which the air pressure measured 500 millibars at 7:00 a.m. Eastern Standard Time, and the distance between contour lines represents a change in altitude of 200 feet. Each map thus depicts a surface of constant pressure, varying in altitude from lows of about 16,000 feet to highs of about 19,000 feet. You can't see it, but as spring comes and the air gets warmer, the whole surface very slowly rises. Wind direction usually runs parallel to the contour lines at these altitudes. The "key map" shows the geographical area covered by the contour maps.

Try to imagine these panels as frames in an animated film. This may not mean anything, but as I was putting together this project, the phrase "hydraulic dreams" kept running through my mind.

– Robert Horvitz





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The One-Straw Revolution

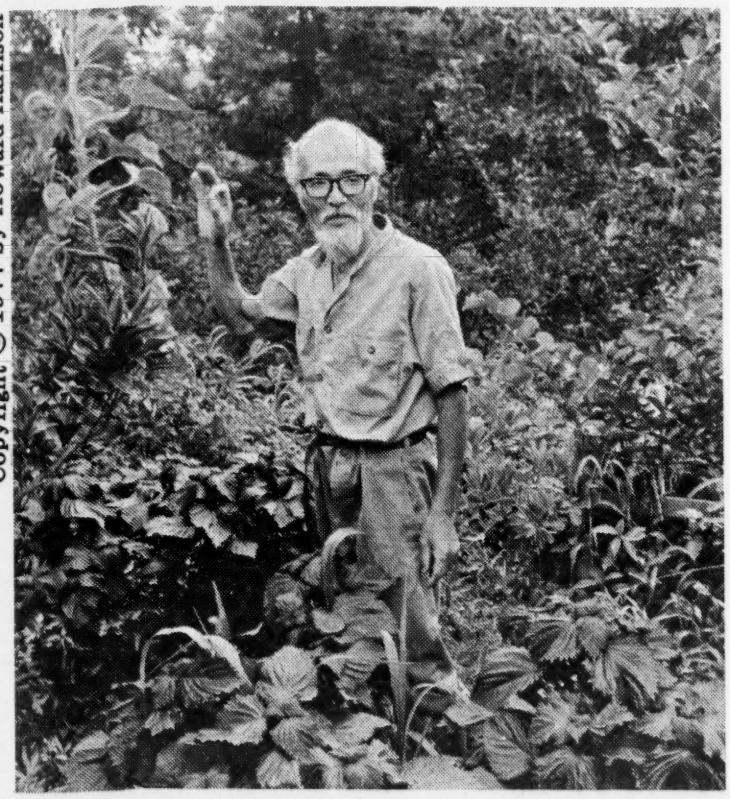
While talking with Wendell Berry about printing his debate with Earl Butz in this issue I asked if any great books had come his way lately. He said no and then said wait and then raved in my ear about **The One-Straw Revolution**, *for which he has written a preface for Rodale.*

As I get it, Fukuoka-san has re-merged the skills of the horticulturist and the naturalist and eliminated the need for cultivation in the process. Rumor of his revolution has been drifting by in recent years; here at last is the Word, both philosophical and technical.

—SB

The One-Straw Revolution
Masanobu Fukuoka
1978; 220 pp.
$7.95 postpaid

from:
Rodale Books, Inc.
33 East Minor
Emmaus, PA 18049
or Whole Earth



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Near a small village on the island of Shikoku in southern Japan, Masanobu Fukuoka has been developing a method of natural farming which could help to reverse the degenerative momentum of modern agriculture. Natural farming requires no machines, no chemicals, and very little weeding. Mr. Fukuoka does not plow the soil or use prepared compost. He does not hold water in his rice fields throughout the growing season as farmers have done for centuries in the Orient and around the world. The soil of his fields has been left uncultivated for over twenty-five years, yet their yields compare favorably with those of the most productive Japanese farms. His method of farming requires less labor than any other. It creates no pollution and does not require the use of fossil fuels.

—Larry Korn, Introduction

•

With the green manure fertilizing the surface layer of the soil and the roots of the Morishima acacia improving the soil deep down, you can do quite well without fertilizer and there is no need to cultivate between the trees.* With tall trees for windbreaks, tangerine trees in the middle, and a green manure cover below, I have found a way to take it easy and let the orchard manage itself.

*During the summer Mr. Fukuoka cuts back the weeds and thicket growing beneath the orchard trees with a scythe.

Copyright © 1977 by Chuck Miller.

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In growing vegetables in a "semi-wild" way, making use of a vacant lot, riverbank or open wasteland, my idea is to just toss out the seeds and let the vegetables grow up with the weeds. I grow my vegetables on the mountainside in the spaces between the tangerine trees.

The important thing is knowing the right time to plant. For the spring vegetables the right time is when the winter weeds are dying back and just before the summer weeds have sprouted.** For the fall sowing, seeds should be tossed out when the summer grasses are fading away and the winter weeds have not yet appeared.

It is best to wait for a rain which is likely to last for several days. Cut a swath in the weed cover and put out the vegetable seeds. There is no need to cover them with soil; just lay the weeds you have cut back over the seeds to act as a mulch and to hide them from the birds and chickens until they can germinate. Of course the weeds will come right back, but by that time the vegetables will already have a head start.** Usually the weeds must be cut back once or twice, but sometimes even this is unnecessary.

Where the weeds and clover are not so thick, you can simply toss out the seeds. The chickens will eat some of them, but there are many which will germinate. If you plant in a row or furrow, there is a chance that beetles or other insects will devour many of the seeds. They walk in a straight line. Chickens also spot a patch which has been cleared and come to scratch around. It is my experience that it is best to scatter the seeds here and there.

** This method of growing vegetables has been developed by Mr. Fukuoka by trial and experiment according to his local conditions. Where he lives there are dependable spring rains, and a climate warm enough to grow vegetables in all seasons. Over the years he has come to know which vegetables can be grown among which weeds and the kind of care each requires.

In most parts of North America the specific method Mr. Fukuoka uses for growing vegetables would be impractical. It is up to each farmer who would grow vegetables in the semi-wild manner to develop a technique appropriate to the area from within his or her experience with the land and the natural vegetation.

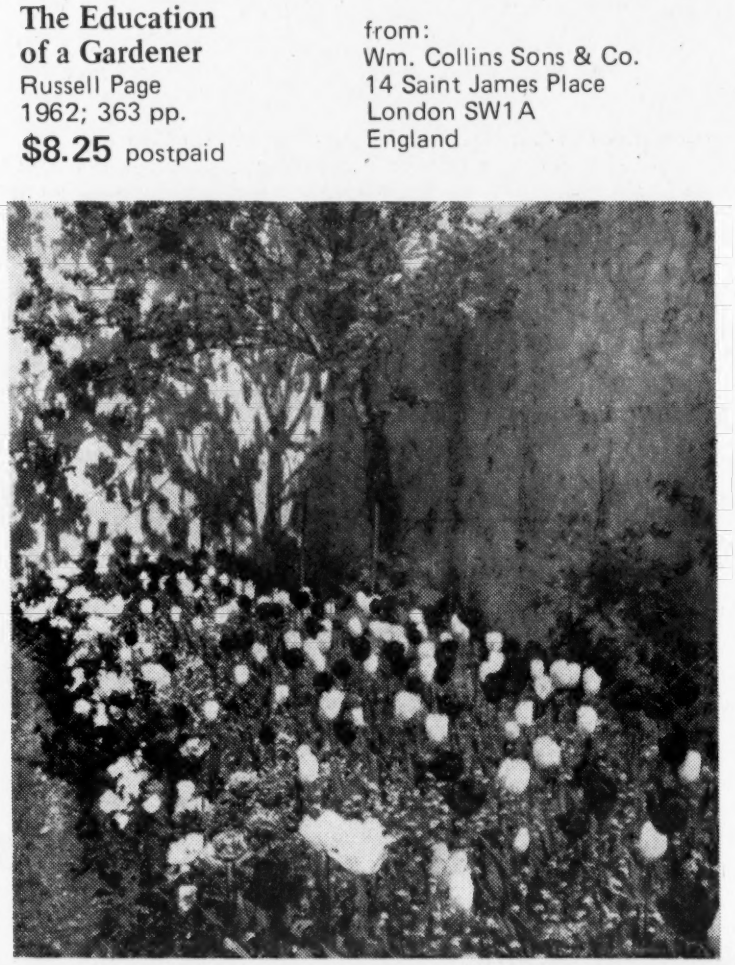
The Education of a Gardener

Every culture has its own way with plants, as this book beautifully explains. We Americans get passionate about wilderness but can't quite relate to the European landscapes that permeate our parks or even to Oriental garden design. The state of our art is the suburban lawn, which takes more in time and energy than it gives in satisfaction. Americans are realizing this, and with the recent renewed interest in gardening we may begin to develop a landscape style of our own. To any gardener with an artist's eye, this book points the way by discussing the principles and thought process of landscape design.

—Rosemary Menninger
[Suggested by Iain Hunter]

The Education of a Gardener
Russell Page
1962; 363 pp.
$8.25 postpaid

from:
Wm. Collins Sons & Co.
14 Saint James Place
London SW1A
England



A friend devised this planting for her farmhouse garden near Paris. Black and white tulips rise from a groundwork of blue forget-me-nots against a sunny white-washed wall patterned by the shadows of an old apricot tree. This makes an exceptional garden scene which has been achieved with authority and complete simplicity.

Vermont Bean Seed Co.

More varieties of peas and beans here than you probably knew existed. All the seed is untreated, and they also sell the appropriate strains of Rhizobia innoculant. This company ran some ads last year in large circulation gardening magazines and got swamped. One result is that this year they have discontinued selling packets of seed (see your local nursery, or another catalog, for these). Minimum orders are now 1/2 lb. of seed, plus postage and handling.

—Richard Nilsen

Vermont Bean Seed Co.
Catalog
Free

from:
Vermont Bean Seed Co.
Garden Lane
Bomoseen, VT 05732

Rattlesnake Pole Bean — 86 days. A delicious bean which thrives on lack of rain. One of the latest maturing beans we offer. The 10' pole will do very well in areas affected by drought. Each plant produces colorful 7" long, round, dark green pods with purple streaks. We do *not* recommend for use in Northern cooler climates. A Vermont Bean Seed Exclusive. 1/2 lb. $1.65; 1 lb. $2.85; 2 lbs. $4.95; 5 lbs. $9.00.

Flowers When You Want Them

Here is a book that contributes to the scope of public knowledge, for there is a science to cutting and keeping fresh flowers which is little known. Techniques vary with variety; many species that commonly wilt upon cutting won't if handled correctly. Nursery methods of forcing plants to bloom are also covered, but basically James has written a new classic in the lost art of harvest.

—Rosemary Menninger [Suggested by Francis Mosher]

Flowers When You Want Them
(A Grower's Guide to Out-of-Season Flowers)
John James
1977; 221 pp.
$10.95 postpaid

from:
Hawthorne Books
260 Madison Ave.
New York, NY 10016
or Whole Earth

Because plants vary in structure and needs, we have to take these varied structures and needs into account. For example, plants have either woody stems, hairy stems, hollow stems, or oozy stems. In general, we split the ends of woody stems, place the hairy stems in hot water, recut the hollow stems under water, and sear oozy stems. In regard to plant needs, water is the most important consideration.

Mondell Pine

This fast-growing pine (P. eldarica) came to Arizona on a seed exchange from Pakistan several years ago. Tupper Tree Farms has exclusive rights to the seed in the U.S. until the trees planted here mature and bear their own seed. Extreme drought tolerance makes it ideally suited to regions in the southwest that don't usually get below 0°F in winter; but it is also being grown in the south, for pulp and Christmas trees. These pines will grow more than 3 feet per year under good conditions, and can reach 70 feet when mature. One thing they can't stand is wet roots; in clay soils, care must be taken to let the root zone dry out between irrigations.

—Richard Nilsen
[Suggested by Jim Frazin]

Mondell Pine

Small orders (potted):
1-1/2 year old seedlings;
to 18" high, in 1 gal. pot
$6.95
including shipping
(within U.S.)

from:
Jerry Shepard Associates
P.O. Box 3766
West Sedona, AZ 86340

Bulk orders (bare root):
Year old (4"-8" high), or
two year old (8"-18" high)
$ .52 each; minimum order, 500 seedlings

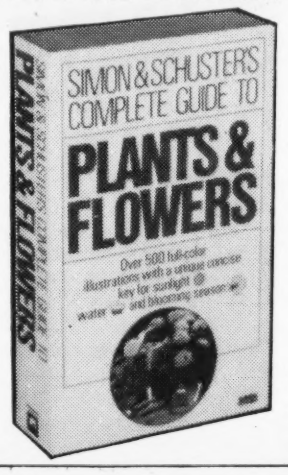
from:
Tupper Tree Farms, Inc.
P.O. Drawer MM
West Sedona, AZ 86340

The small conifer on the left is a Colorado Spruce (Picea pungens). It was planted on the same day as the 12-foot Mondell pine (center).

Simon & Schuster's Complete Guide to Plants and Flowers

A flower gardener's encyclopedia, a seed catalogue's companion, and a visual delight. Five hundred half-page color photos with graphic cultivation tips for common varieties of flowers, cactus, houseplants and other ornamentals. We've listed the Color Dictionary of Flowers and Plants *(Fall '76 CQ), which is equally good but harder to find in local bookstores.*

—Rosemary Menninger



Simon & Schuster's Complete Guide to Plants and Flowers
Frances Perry, Ed.
1974; 522 pp.
$7.30 postpaid
from:
Simon & Schuster
Attn: Mail Order Dept.
1230 Ave. of Americas
New York, NY 10020
or Whole Earth

How long it takes

. . . In Indiana I farmed intensively a 3/4 acre piece that had been heavily chemicalized with 2-4-D, fertilizers, and pesticides over 10 - 15 years. Also, mono cropped hybrid corn. The first yr. fair crop growth, the 2nd decidedly smaller growth and no growth, cancerous plant parts, few worms, the 3rd more propagation more adult plants fewer plant cancers more worms healthier weeds, 4th yr in selected parts of the garden where high labor intensive procedures were applied very good plant production was seen; worm population exploded; the 5th yr. saw a saturation level of worms and moles came in to balance the population; the soil thru 4 yrs of heavy mulching and composting was light and fairly well balanced. Crops came on earlier were sturdier and stronger; their general appearance, taste, and pest resistance was excellent. . . .

—T. Tuffin, Spokane, Washington

Solar greenhouse access

Dear Stewart,

Looking through back issues, I noticed there wasn't much on solar greenhouses — Brace Institute, Yanda's book, upcoming Rodale, a little New Mexico Solar Energy Society. So here are four comprehensive sources:

Proceedings, Solar Energy — Fuel & Food Workshop, 1976, Merle H. Jensen, Ed., Environmental Research Laboratory of the University of Arizona, Tucson, AZ. $5.00.

Proceedings, International Symposium on Controlled Environment Agriculture, 1977, Merle H. Jensen, Ed., same as above.

(I haven't seen these 2 yet, but they come highly recommended from a horticulturist; might be commercial-slanted.)

Proceedings of Conference on Solar Energy for Heating Greenhouses and Greenhouse-Residential Combinations, 1977, Ted Short, Ed., Ohio Agricultural Research and Development Center, Wooster, Ohio. $5.00.

(Good article on glazing properties.)

Proceedings, Marlboro Solar Greenhouse Conference, John Hayes, Marlboro College, Marlboro, VT.

(Very comprehensive.)

I just returned from the Marlboro Conference, and I suppose the Proceedings are still on the press.

Here's one for you:

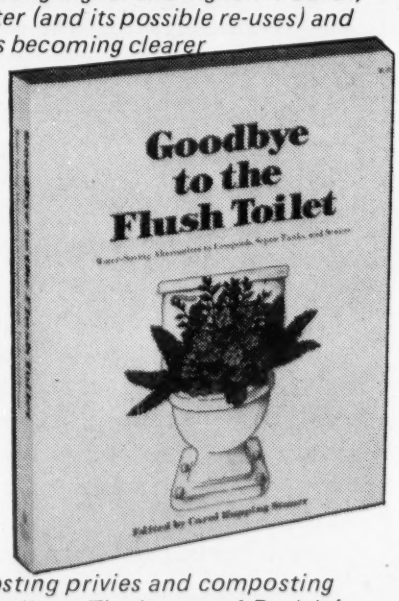
> Each man
> Is an approach to the vigilance
> In which the litter of truths becomes
> A whole . . .
>
> — Wallace Stevens, **Opus Posthumous**

You've been indispensible,

Yrs.,
David Williams
Huntington, New York

Alternative sanitation systems

A change is rapidly occurring in attitudes towards "wastes." First, the use of drinking water to simply carry feces and urine from your house to a septic tank or sewage treatment plant is under attack. Second, thinking of feces and urine as "wastes" (rather than "treasured fertilizer") is increasingly frowned upon. Third, costs of toilets and treatment facilities to process feces and urine are getting higher and higher. Fourth, the difference between grey water (and its possible re-uses) and black water (and its problems) is becoming clearer and clearer. Here are three recent publications reflecting this new public awareness:



Goodbye to the Flush Toilet
(Water-Saving Alternatives to Cesspools, Septic Tanks, and Sewers)
Carol Hupping Stoner, Ed.
1977; 285 pp.
$6.95 postpaid
from:
Rodale Books
33 East Minor
Emmaus, PA 18049
or Whole Earth

The best overall view of composting privies and composting toilets as well as greywater recycling. The legacy of Rodale's love of composting comes home to you and your bathroom plumbing. A fine essay by Joel Tarr called, "How We Got Where We Are, the Why and Wherefrom of Sewers."

Rural Wastewater Disposal Alternatives
1977
Free
from:
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95801

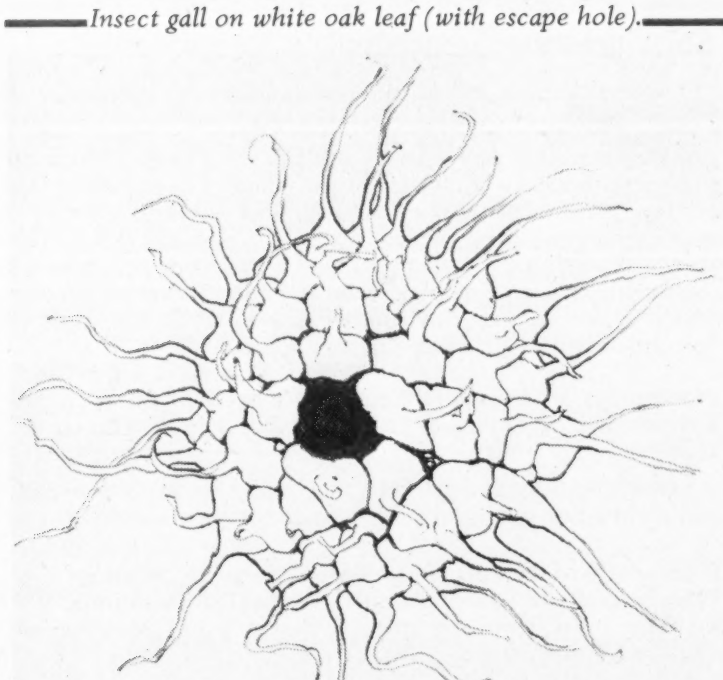
Not nearly as well illustrated as Rodale's but better for public aspects of on-site sewage management (health, current research, legislation, water carriage vs. dry toilets, etc.). My two articles (CQ Spring 1977) on greywater recycling and drum privy construction are included in a somewhat battered bureaucratic form. Also, better construction details for the Farallones privy and Sand Filter treatment of greywater than Rodale. This report is the end result of California's Office of Appropriate Technology's quest for imagination in government. Valiant!

On-Site Waste Management, Vol. VI
Free
from:
Hancor, Inc.
P.O. Box 1047
Findlay, OH 45840

Again, battered forms of these essays appear in the OAT publication. The first ("On-Site Waste Management Districts") by J.T. Winneberger explains (with his usual clarity) how public agencies can run on-site systems (pit privies or septic tanks) and save towns the cost of sewering up. The second ("Pressure Sewers") by Jim Burgel is the best summary available on how to use small pipes and decentralized sewage treatment by pumping (vs. gravity flow).

—Peter Warshall

Insect gall on white oak leaf (with escape hole).



BOTANIC ARCHITECTURE

TEXT & ILLUSTRATIONS BY:

MARK PRIMACK

The Archetypal Plant Gall stands as a coevolutionary course that our earliest ancestors might have taken, but didn't.

A gall occurs when the Animal (usually insect) stimulates the embryonic cells of the Plant (root hair, leaf or flower bud), causing those cells to grow into something other than their intended form. Instead, they develop into a residence or breeding ground specifically designed to meet the needs of the animal inhabitant. In addition, the plant host redirects foodstuff to the gall, thereby ensuring that the gall-dweller need not attack the plant itself for sustenance.

In order that the Archetypal Plant Gall represent a truly symbiotic relationship between plant and animal, the animal must provide a service commensurate to benefits received. It does this by acting as the inhouse pollinator and protector of the host plant. As it would seem that reproduction (specific survival) is the dominating concern of plants, then having an animal with custom-built pollinating apparatus living on the premises would be, for the plant, adequate remuneration for the provision of bed and board. Beyond that, however, the gall-dweller is armed and ready to protect the host from its natural predators, without regard to personal safety.

Yet another book in progress here. If you know of good things to add to it, get in touch with the author care of this magazine. Mark Primack, 26, got his training at the Rhode Island School of Design and the Architectural Association in London. He lives in Santa Cruz, California, and recently got a grant from the California Arts Council to pursue his study of botanic architecture.

—SB

Though very little is known about the formation of plant galls, it is believed that they result from a combination of chemical and physical stimulation. The animal apparently injects some unspecific hormone into the primordial plant tissue which acts to free it from its programmed pattern of growth, leaving it open to the designs of the animal. This ability to secrete plant growth hormones is not confined to the lower animals; human urine contains auxin, a primary growth activator in plants. It should be noted that a plant communicates with its environment through a complex series of hormonal fluctuations. And that the gall-dweller has broken that hormonal code to communicate directly with that species or variety of plant that has become its host.

As I said, the Archetypal Plant Gall represents a coevolutionary course that our earliest ancestors did not take. As it happened we chose the more immediate and obvious path of fire. By embracing fire we removed ourselves from our natural environment and our technology became a vehicle for the manipulation of nature.

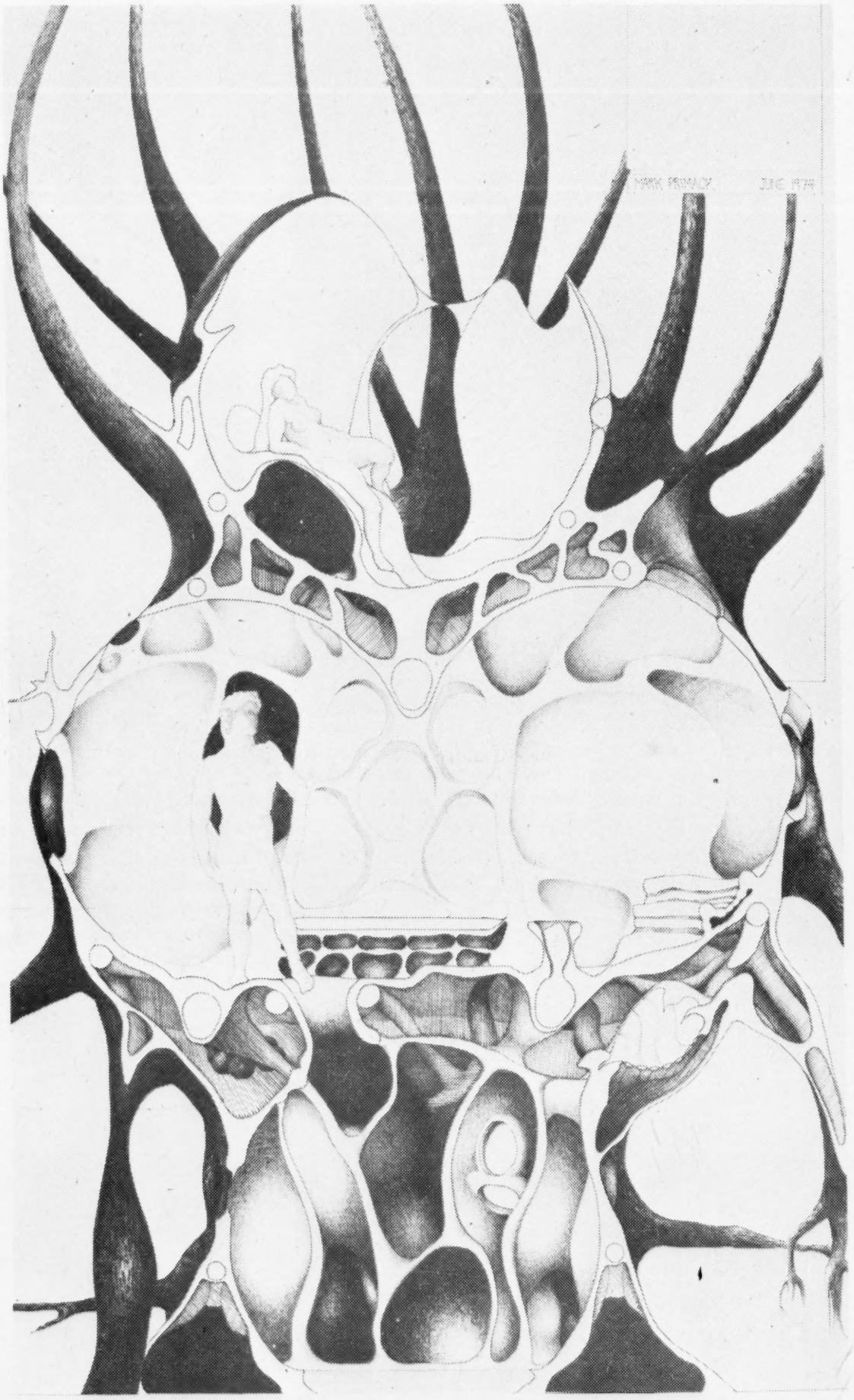
To understand what we missed through that early error in evolutionary navigation, we need only visualize ourselves in a gall-like, symbiotic relationship with the plant world. Trees, vines, shrubs and herbs grow communally to provide comfortable and varied shelter, adequate food that is free of toxins and rich in flavor and nutriment, and a medium for the aesthetic and spiritual fulfillment of the human occupant. In return, we, the inhabitants of this Botanic Architecture, have become the ultimate horticulturists, guiding and protecting the growth of our environment with ecological wisdom and an inherent altruism. Our rhythms, both circadian and circannual, are those of our environment. In short, human integration with nature, and its reciprocal, is far more wondrous than anything I've yet seen on the Wild Kingdom. The world is a garden of infinite variety. The balance is sublime.

As a model the Archetypal Plant Gall lacked the pazazz of fire. We were dazzled and later dazed. Only now, as the fires begin to die down, do we seriously begin to look for alternatives. Sadly, we look to other, more sinister sources of fire, as if point of origin could make the difference.

I am not suggesting that we eat our hearts out over this; only that we re-examine the path presented by the gall; that we take the time to formulate some naturalizing, long-term objectives for ourselves and our descendants; and that we approach these objectives through the resurgence of our creative individualities.

ABOUT PLEACHING

In the words of Anthony Huxley, nature will always 'hedge her bets,' taking many different paths at once rather than gambling survival on one modification or invention. Hence the diversity of life on this planet; hence also the innocent failures, born at the wrong time or in the wrong place. Our own history, though basically one-directional, has displayed some noteworthy false starts of its own. And the art of pleaching is surely one of these.

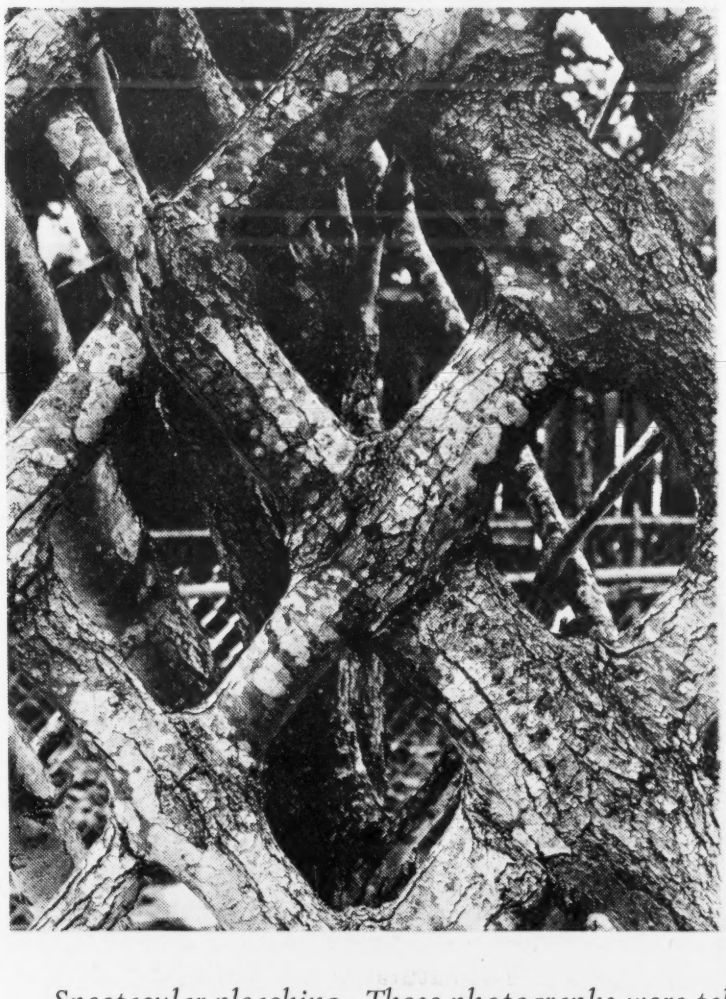


A plant is considered to be 'inosculate' if it is self-grafting; if the branch of one individual will, as the result of gentle abrasion, form a living bond with the branch of another individual, or with another branch of the same plant. When this grafting is aided or initiated by humans, the process is called 'pleaching.' Inosculate plants include:

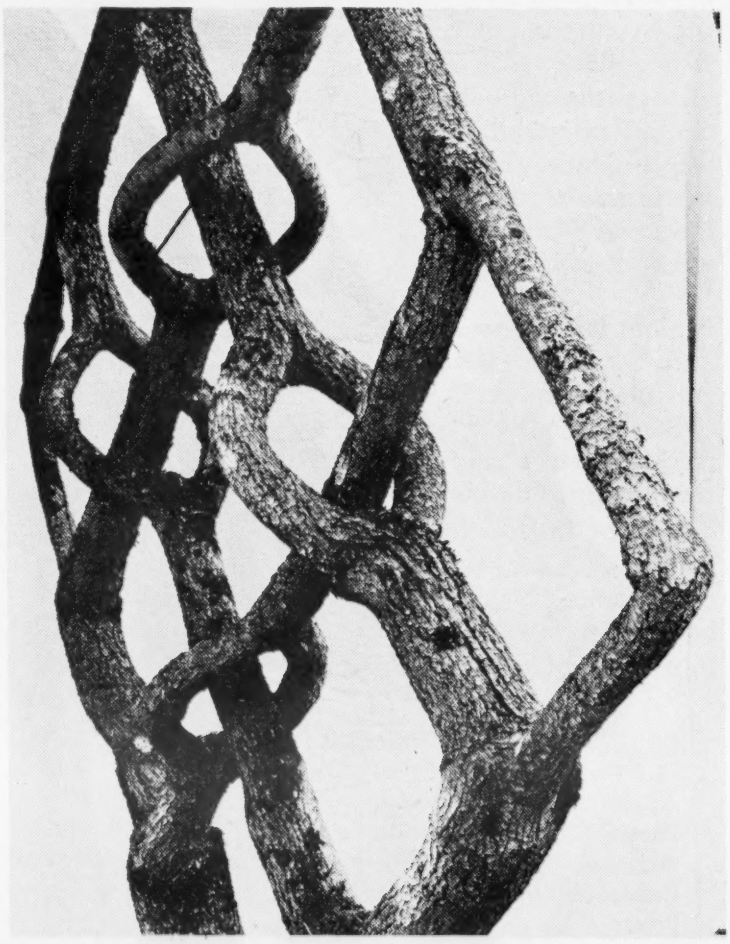
Elm	Holm Oak	Olive
Live Oak	Golden Oak	Pear
Apple	Peach	Almond
Beech	Hornbeam	Linden
Hazelnut	Crepe Maple	Dogwood
Golden Willow	Wisteria	Grape
Privet	Liburnum	Sycamore

In medieval Europe, in areas where annual flooding endangered human settlement, the pleaching of inosculate trees was employed as a solution to what otherwise might have been an insoluble problem.

These trees were planted on a grid, like a small orchard. As they grew, branches were pruned and trained along this grid, so that eventually the branch of one tree met that of its neighbor. At that point an incision was made in the bark of both branches and they were tied together, like blood brothers or sisters. The



Spectacular pleaching. These photographs were taken at the Tree Circus in Scotts Valley, California. Axel Anderson, a farmer, spent 25 years growing over 50 species of trees. The four-legged giant with Primack under it is the oldest member of the circus. A pocket knife and string were Axel's tools, along with daily observation and occasional adjustment of the bits of wood tied into temporary frameworks that guided the growth. Axel's Tree Circus made 12 appearances in Ripley's "Believe It or Not."
Photos by Janet Pollock.



analogy is deserved in that not only did these branches grow together to form one member, but their support activities (conduction of water/minerals and sap) merged, thereby joining the life processes of the neighboring trees.

When these pleached branches had matured to form substantial limbs, connecting all the trees of the 'orchard,' planks were thrown across on which huts were erected, eight or ten feet above the seasonal flooding. Dense foliage grew out from the marginal trees, while those on the interior continued to draw water and minerals from the soil for the use of the collective, while receiving sustenance from same. And of course the exterior foliage served to shelter the huts from climatic excess, and perhaps to bear edible fruit.

Now, since the growth of these inosculate trees was planned, regulated, and protected by humans to serve a human need and since the trees did presumably thrive, we can conclude that a state of interspecies cooperation, if not symbiosis, was achieved. And though it lacked the sophistication of the Archetypal Plant Gall, it was still a start; we could picture further developments, say the introduction of vines or second story growth, that would one day lead to the redundancy of the built hut for the provision of total shelter.

Sadly, architectural pleaching represented a false start in the evolution of human technology. The inexorable trend was isolationist, favoring the built over the grown environment. Though pleaching survived as an ornamental garden art, it in no way compared to its structural predecessor.

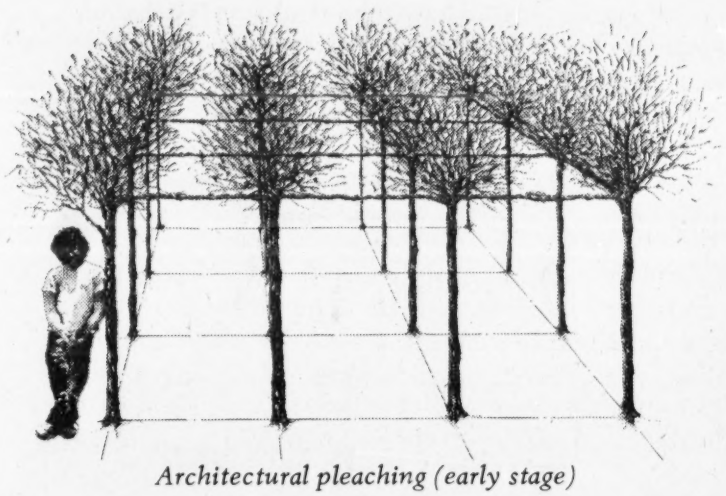
But the *revival* of architectural pleaching can be seen as a positive step toward living in the natural world. The very fact that it demands a commitment to both time and place attests to its merit as an alternative trend in human environments. And pleaching can be undertaken without denying our present dependence on mechanical living systems. We still have access, privately or collectively, to some outdoor space. And though our knowledge of what to plant and how to grow it is as lacking as our imaginations are blunted, there is reason to hope. For in summer, sleeping beneath pleached arbors that grow as noticeably as themselves, our children will surely glimpse broader possibilities.

FICUS TWICE

The degree to which our involvement can extend the prospects of nature is demonstrated by a member of the fig family, *Ficus Benghalensis*, commonly known as the 'banyan.'

The banyan begins life as an epiphyte, growing down from the branches of tall trees where birds have deposited its seed. When its aerial roots touch ground, the banyan then grows upward as an inosculate vine, eventually strangling its host tree. By that time it has taken the habit of a real tree, but its story has only begun.

The banyan characteristically sends out its branches in a horizontal fashion, providing maximum spread for



Architectural pleaching (early stage)

its large leaves. Structurally, this is not sound practice and would lead to the limb splitting from the trunk. To compensate for this structural indiscretion, aerial roots descend from these overburdened limbs which, when they reach and penetrate the soil, thicken to serve as props, thus carrying the excess weight of the branch. In time these prop roots become trunks in their own right, sending out branches of their own, sustained by a continued subterranean root growth. So after a while it becomes difficult to determine which trunk was the original and which came later. The banyan now resembles a small forest rather than a single tree. Of course, this is the ideal growth cycle of the banyan. The natural reality is a bit different.

Due to the thickness of the foliage and its resultant ability to shed rainwater outward to the tree's periphery, the ground beneath the banyan becomes dry and hard. Prop roots have a tough time penetrating this hardpan. These aerial roots also have trouble growing in a direct and orderly manner. They become tangled with one another and rarely reach the ground in a structurally sound configuration. This accounts for the banyan's stunted and confused demeanor when growing in the wild. So it is with wonder that we approach the Great Banyan on the grounds of the Calcutta Botanical Gardens in India.

The Great Banyan is estimated to be about 200 years old. The banyan's practice of establishing prop roots has been subject to human intervention for most of that time. Rather than leave the tree to its own devices and allow a proliferation of entangling aerial roots, many have been cut back. However, select roots have been tied to and drawn down bamboo poles until they have safely anchored themselves in soil which has been loosened and moistened by human hands.

In 1968 the Calcutta Banyan had one thousand such auxiliary trunks. The tree stood a hundred feet tall and its leafy canopy covered four acres! It was over a quarter mile in circumference and, according to E. Hyams, 'is still growing vigorously and there is no reason why it should not continue to do so indefinitely.' The Calcutta Banyan stands as the largest tree, in sheer mass, in the world. It can be said that this tree, which could easily shelter an entire village, was designed by humans.

But what if sheltering a human community had been the original and lasting growth objective of those 200

years' work? And what if we could imagine such environments as readily and as effortlessly as we now remember telephone numbers or zip codes?

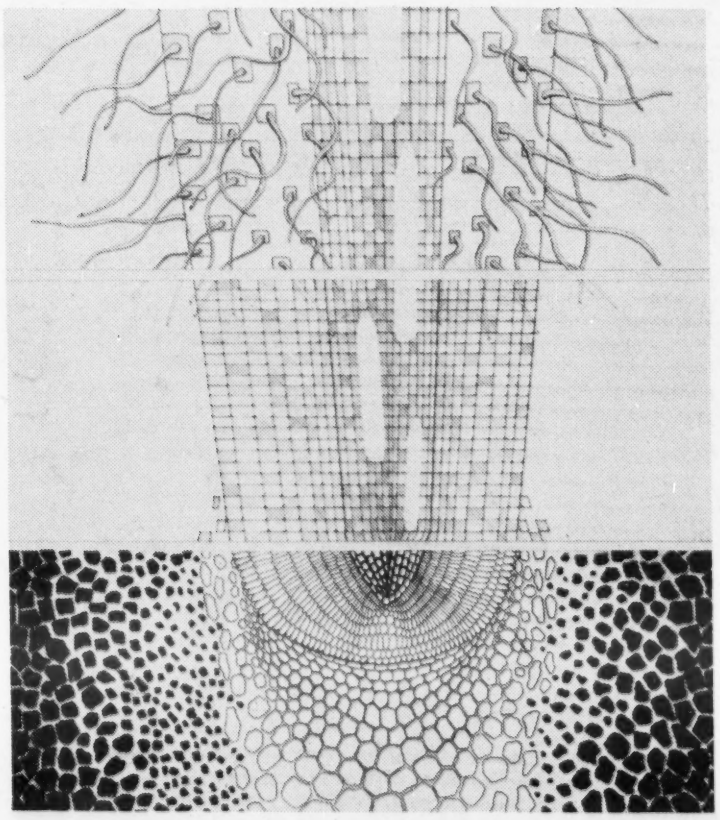
The degree to which nature might extend the bounds of human potential is displayed by the banyan's sister, *Ficus Religiosa*, the bo tree.

We must begin our story of the bo tree with an account of the pineal gland. The pineal is a small body located, in humans, where the spinal column meets the brain. The ancient Hindus recognized the pineal as the third eye of enlightenment. Only recently has modern science identified it as an endocrine gland which secretes two known hormones, the most important of which is serotonin. Serotonin promotes blood clotting and muscle constriction in the body, but in the brain, according to J. Bleibtreu, "it appears crucial to what is conventionally considered 'rational' thought. If brain cells are deprived of serotonin, there results a disruption of rational thought. . . . minute quantities of serotonin affect mental states (and) alter perception. New dimensions of conventional reality accompany changes in the level of serotonin in the brain."

The discovery, some years back, that LSD acts by inhibiting the distribution of serotonin to certain receptor cells in the brain, brought with it a greater respect for the staggering range of consciousness controlled by this hormone.

We know that many hormones found in animals are also present in plants; we spoke earlier of auxins in human urine. Likewise serotonin appears in many plants, and it 'abounds' in figs; and in no fig more than *Ficus Religiosus*, the bo tree, beneath whose limbs the Buddha sat for seven years; beneath whose foliage the Buddha gained enlightenment.

Of course, to many, a revelation beneath a fig tree in the East is as believable as modesty beneath a fig leaf



Banyan tree in Florida. The vertical columns are roots.

in the West. But, at a time when we are being forced to admit that so much of our mental and physical composure is influenced, perhaps governed, by our biological bond with the natural world, it might be wise to begin thinking of shelter as something more than contained, airconditioned, space.

THIS TOO MAY NOT BE TRUE

Originally the art of horticulture entailed the examination of weeds for their possible nutritional, medicinal, commercial or aesthetic value. Finding a cabbage in a mustard plant required not only a strong commitment to purpose, but a remarkable empiric understanding of the forces of nature and the potentiality of plants.

In the early days, before Kew, before Padua, horticulture was largely an amateur undertaking. People engaged in it as they would in other crafts; through it they could contribute to society's understanding and enjoyment of nature while continuing to pursue their own personal survivals. Horticulture was an avocation. Those involved were generally self-taught; they had to be, for there was at that time no coding or cataloguing of information.

As horticulture had not yet become a Science, people did not have to be scientists in order to indulge. This openness in membership allowed the greatest diversity in approach and interpretation. There were still no rules of procedure; no dogmas to usher the curious down well-trodden paths toward anticipated conclusions.

The art of horticulture was basically anarchic, as is any art. Communications being virtually nonexistent, there was probably much duplication of work and loss of knowledge through an owner's death. So the dissemination of new discoveries took many years, if not lifetimes, and this time factor provided the final screening. Horticulture was an evolutionary activity.

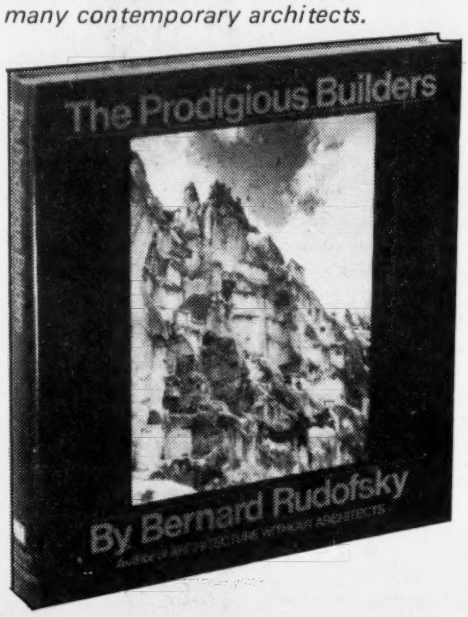
Horticulture, in those days, represented the type of pioneer work that we now long to do but that we fear will never be possible again; work in which the only references were the words of the ancients, and the only rules were constancy and patience.

But horticulture never looked into the *architectural* value of living plants, an arena of limitless evolutionary potential in which our bodies might one day become our most expressive tool and the natural world become the real world of our recreative lives. ■

The Prodigious Builders

Bernard Rudofsky is one of the few authors that has shocked me into a new mode of thought. His 1964 **Architecture Without Architects** *(CATALOG, p. 84) greatly modified my concept of "building," causing an attitude change that has made a real difference in my life. That book remains one of the best available antidotes to the follies of modern architecture.* **The Prodigious Builders** *considers an even wider selection of vernacular building and adds erudite commentary based on insights gained by Mr. Rudofsky as he traveled many years observing and photographing. His ideas seem to be even more relevant when compared with the limp proposals offered by so many contemporary architects. Exciting stuff!*

—J. Baldwin



The Prodigious Builders
Bernard Rudofsky
1977; 383 pp.
$14.95 postpaid
from:
Harcourt Brace Jovanovich, Inc.
757 Third Ave.
New York, NY 10017
or Whole Earth

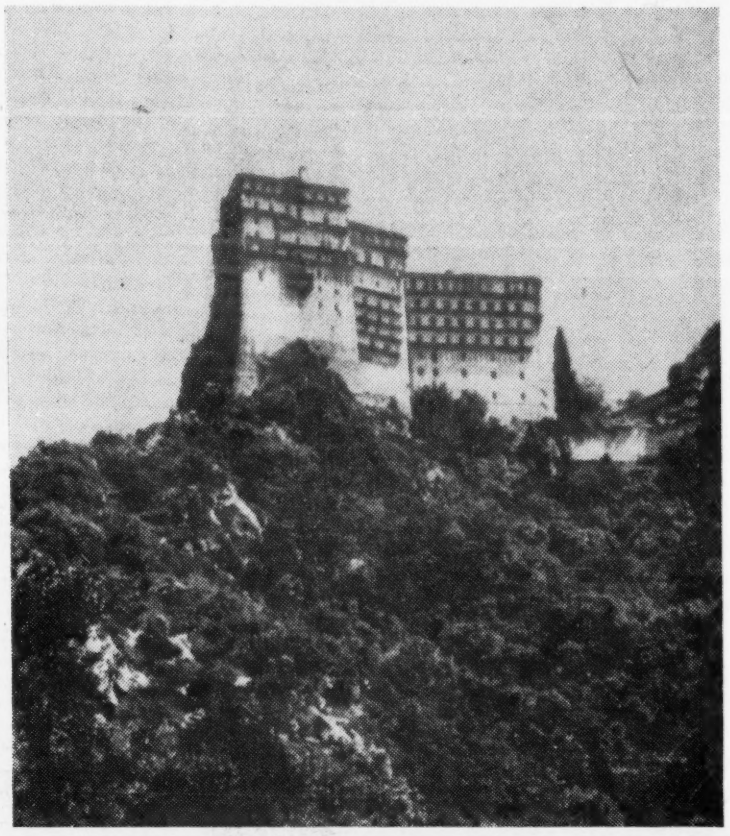
Door and window of this house in the oasis of Walata in Mauretania are typical of the traditional way for improving the looks of the austere domestic architecture.

Form, Function & Design

Reprinted AT LAST, high quality and inexpensive from Dover, a design classic. I said in the CATALOG (p. 118): "There is really no better introduction to all that is admirable in design. It is full of the kind of love and wisdom that you immediately take for your own." Steve Baer said, "The book is wonderful. Here is a man trying to tell the truth about design and about our lives and civilization. I never heard of him. When I read his book I can't understand why."

—SB

Form Function & Design
Paul Jacques Grillo
1960; 238 pp.
$6.00 postpaid
from:
Dover Publications, Inc.
180 Varick St.
New York, NY 10014
or Whole Earth



Even though Simopetra ranks as one of Athos's most sturdy buildings, a visit to it is not recommended to anyone unpracticed on the flying trapeze. A close brush with eternity awaits one at the guest quarters, located on the top floor of the outermost wing. The sagging wooden galleries that gird the cyclopean walls, which in places provide the only communication between the rooms, do not just look fragile; they are. A single misstep will cut short your journey. The floorboards, as thin as shingles, curl up under one's weight, while the *trompe-l'oeil* railings stand upright by sheer inertia. Self-preservation has taught the monks a way of floating angellike over these aerial corridors — no doubt a matter of faith rather than gravity, like walking over glowing coals. Seeing you blanch, your guide hastens to tell you by way of encouragement the story of a fellow monk who, while carrying a tray with coffee cups along the very gallery you are standing on, broke through the treacherous planks and fell several hundred feet to his death. And here one might suppose the story ends. But no; the doomed monk shortly emerged from a crack in the rocks, hale and unperturbed, the glasses on his tray in place and not a drop of coffee spilled. At Simopetra it pays to take out afterlife insurance.

Slate Roofs

My Dad's house had a slate roof that weighed 12 tons. In the 30 years we lived in that house, there was not one leak. This was in a part of New Jersey where the weather was just plain nasty, including such assaults as hurricanes and deep snow. The only damage we ever had to repair was a few slates busted by high fly balls from nearby baseball games. What other roof gives that kind of performance and is a beautiful natural material? Not cheap, of course, but sometimes you can strip an old house back east. Anyway . . . this is the complete slate bit, reprinted from a 1926 edition. As such, the booklet is history as well as a handbook. You probably won't want to know more than they show.

—J. Baldwin

Slate Roofs
National Slate Association
1926; 84 pp.
$5.25 postpaid
from:
Vermont Structural Slate Co., Inc.
P.O. Box 98
Fair Haven, VT 05743
or Whole Earth

BY KEN BUTTI AND JOHN PERLIN

Solar Water Heaters in Florida 1923-1978

Copyright © 1978 by Ken Butti and John Perlin.

1923 – The First Boom

Just as the solar water heater was being phased out in California by the discovery of cheap natural gas, it found a new market in southern Florida.

Solar water heating was brought to Miami during the building boom of the 20's, and for good reason. Thousands of hotels, apartments, and houses were sprouting along the southern coast. Miami's population grew from 29,000 in 1920 to more than 75,000 by 1925. But newcomers found there was no cheap way to heat water.

Consequently hot water was a luxury many did without. Those who could afford it heated their water with either artificial gas or electricity. Gas rates in Miami were among the highest in the nation. Electric rates were high too – almost eight times the current rate in Miami, even taking inflation into account.

On a trip out west, a wealthy Florida builder named H.M. Carruthers saw how well the Day and Night Solar Heaters worked, and he immediately decided this was the solution to Florida's hot water problem. He bought the patent rights from the California manufacturer for $8,000 and an Oldsmobile touring car and established the Solar Water Heating Company in Miami in the fall of 1923.

Solar water heating proved to be a natural for south Floridians, providing them with a cheap and plentiful supply of hot water. We talked about that period with Harold Heath, former sales manager of the Solar Water Heater Company and resident of Miami since 1922. He elaborates:

> Talk about a happy customer! People were living all this time taking cold showers or (if they used electric) turning on that electric heater which they were afraid to turn on because those things were 3,000 to 4,000 watts and the meter would just take off! The cost of operating those things would eat 'em up alive. In fact, some of our best customers were Power and Light executives because they knew what it cost.

The solar water heater, on the other hand, paid for itself in a little over two years.

In a period when other water heaters had to be manually operated, another saleable feature of the solar water heater was that it provided hot water automatically. "It can't stop working while the sun shines. It can't get out of fix, explode, or start a fire," boasted one ad. Contrast this to how the electric water heater worked, according to Hal Heath:

> If you wanted a bath, you'd turn it to high and wait fifteen or twenty minutes. Then you could take a bath. And if you got in your car and got halfway to Palm Beach and somebody said, "Did you turn the hot water off?" and you said, "I don't know whether I did or not," you'd turn around and head back home, because the damn things would blow up . . . and that happened!

Carruthers did a tremendous business. Solar water heaters went up everywhere – private homes, hotels and apartments. The larger apartments required a bank of heaters 14' X 4' attached to a 300-gallon storage tank. As William D. Munroe, a long-time Miamian, remembers:

> By the mid-1920's the manufacture of solar water heaters was an established industry in southern Florida. I vividly recall seeing what seemed to be acres of solar collectors on apartment houses' roofs.

The popularity of solar water heating was so great that scores of real estate ads made it a point to mention that the homes for sale were equipped with solar water heaters. One ad stated, "Don't fail to see this wonderful bungalow . . . completely furnished . . . garage with laundry and wash trays, solar water heater, Frigidaire. Other fine features . . . – L.J. Unsem, Builder of Homes Beautiful."

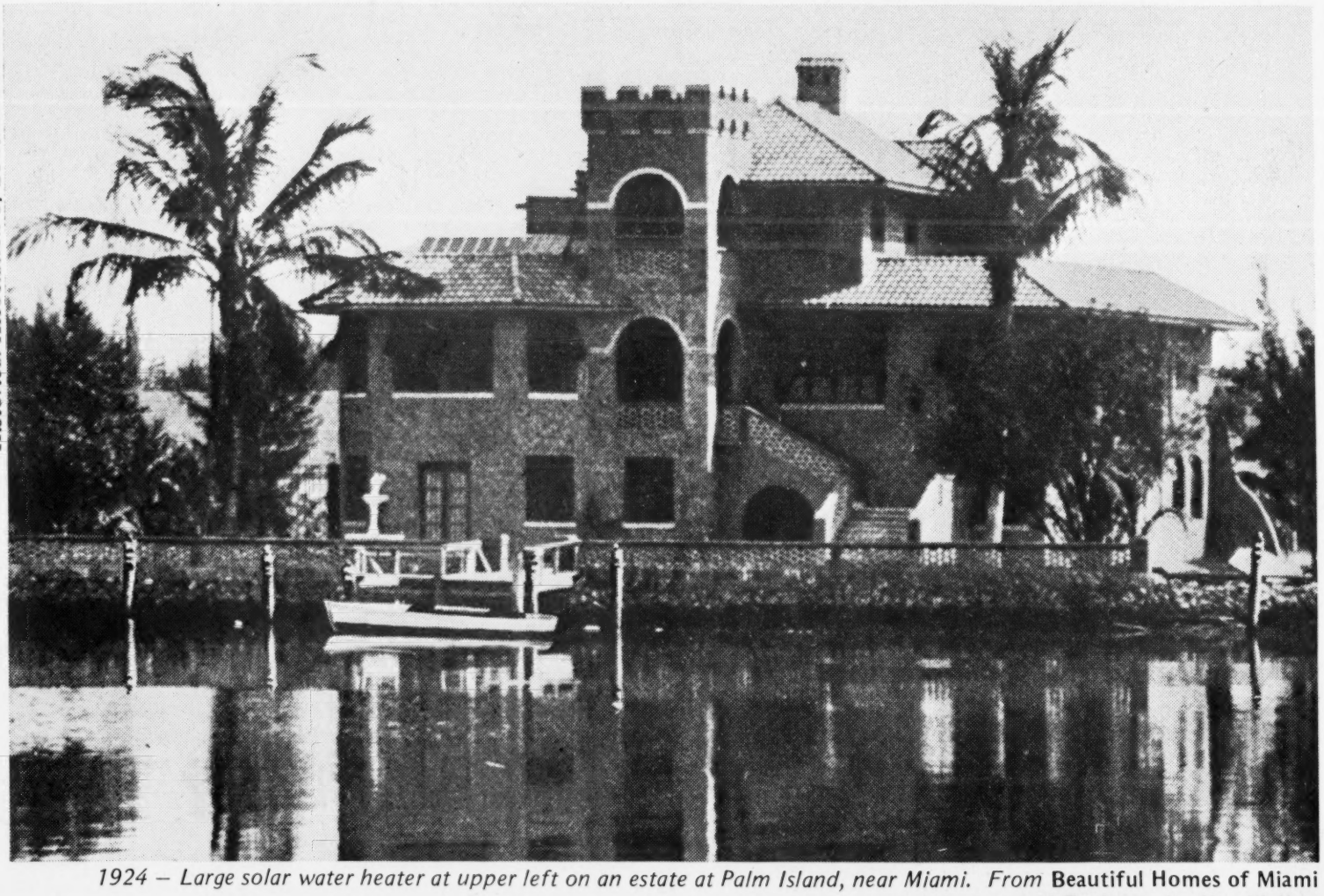
Our cover story in the Fall '77 **CQ** *was Butti and Perlin's "Solar Water Heaters in California, 1891-1930." Here's the Florida sequel to that account.*

One difference is that solar water heating vanished completely in California with the discovery of local natural gas (it's coming back rapidly now). That didn't happen in Florida. Old solar heaters were kept, and new ones are being added. According to a report in the January, 1978, **Solar Collector** *(Newsletter of the Florida Solar Energy Center, Cape Canaveral), 2,300 domestic solar heating systems were installed in single-family homes in Florida during the first six months of 1977, bringing the total of recently installed systems to 10,000.*

Butti and Perlin's research on early American solar history is still in the process of becoming a book. If you have information to add, get in touch with them quickly, care of us (address below).

–SB

Historical Association of Southern Florida


Historical Association of Southern Florida

1924 – Large solar water heater at upper left on an estate at Palm Island, near Miami. From **Beautiful Homes of Miami and Environs,** *by Kay Walker.*

The solar collectors and storage facilities installed by Carruthers were no different from the Day and Night systems except the tubing was galvanized iron rather than copper as in California.

Since the Solar Water Heater Company owned the patent rights in Florida, it faced no competition. Precise sales figures are unavailable but we do know that Carruthers built a factory occupying an entire city block solely for the manufacture of solar heaters. An issue of the **Miami Herald** in April, 1925, listed the Solar Water Heater Company as one of the seven largest construction firms in Miami.

But the building boom leveled off in the early part of '26 and collapsed by the summer. Then in September a ravaging hurricane hit. With "all things broke to hell," as Heath put it, and the building boom dead, the solar water heater business also died. Carruthers closed up shop and left, letting Charles Ewald take charge of his business affairs in Miami.

Reviving the Business

Six years later Ewald decided that the solar water business could be turned into a lucrative enterprise again. He opened up the plant and began to test different solar collector designs.

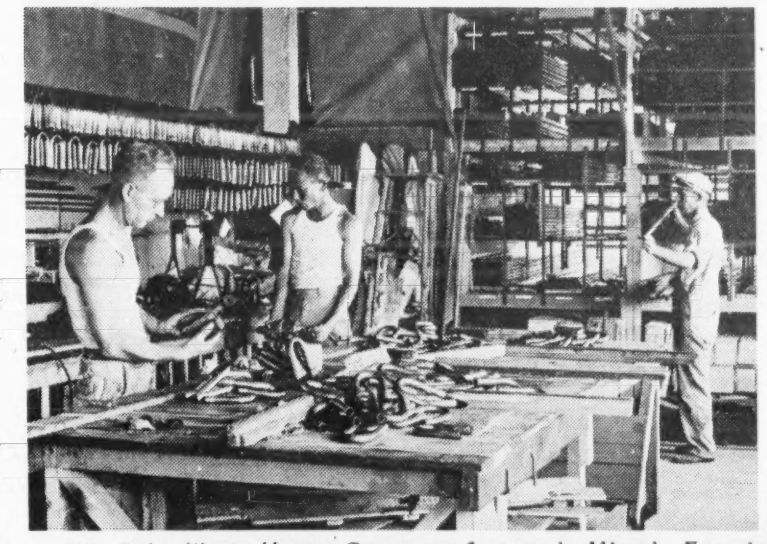
Ewald built several test systems. He placed thermometers at the top and bottom of the storage tank to check the water temperature, and he inserted pieces of cork inside glass tubing in the circulation lines to study the rate of flow of the water. He concluded from his experiments that one and a half feet of coiled tubing should be used for every 140° F gallon of water desired. But he also discovered that adding more tubing in a given area forced him to pack the coils too closely together, causing undue constriction on the flow rate. The water circulated so sluggishly that only a very small quantity of excessively hot water was produced.

The conventional solution to this problem was to increase the collector's size to accommodate the additional tubing needed. This meant increased costs for extra sheet copper and glass. Even if the added costs could be absorbed by the customer, many times there would be no room on the roof for such a large collector.

Ewald resolved this dilemma by using two sets of coils placed side-by-side on a single sheet of copper backing. Each coil was shorter than the coil in the ordinary collector, but their combined length was greater. Ewald's design managed to fit the coil system on the same size copper sheet used in the ordinary collector. With more tubing properly spaced, there was hotter water and more of it. Ewald called this improved solar water heater with the double coil design the Duplex.

Ewald wanted to continue selling the single coil heater too, so he set to work improving it. He discovered that the loops of the coil in the ordinary collector were spaced too close together for optimum performance. He reduced the number of loops to obtain better flow.

Ewald introduced additional modifications that affected both the single coil and the Duplex models. He replaced galvanized tubing with soft copper, which



The Solar Water Heater Company factory in Miami. Exterior with test heaters on roof – about 1938. Interior – late 20s.

is a better conductor of heat. This type of tubing also will not split in freezing weather, allowing solar collectors to be sold in places such as northern Florida without requiring the special non-freeze adaptation developed by Bailey in California. According to the company, the tubing was tested at temperatures as low as 10° F below freezing without any unfavorable results. The company unconditionally guaranteed collectors with soft copper tubing against damage due to freezing. (A cold wave in Miami in 1958 verified their claims; no coils made from soft copper suffered damage, while nearly all hard copper coils split.)

Ewald also insulated the sides and bottom of the collector to prevent heat from escaping. Furthermore, he built the collector and tank boxes and stand from galvanized metal. Previous wooden construction had deteriorated badly in the Miami humidity and dampness. According to Sheldon Grebe, President of the Solar Water Heater Company in 1935:

> The organization set about to create a more substantial system. We adopted the use of all-metal construction . . . Coils are placed in an all-metal galvanized sheet steel box . . . and mounted on steel rafters with tempered, hot-tipped, galvanized steel J-bolts.

The Solar Water Heater Company sold to owners of existing homes in the area since there was no new construction going on at the time. Heath explains how they went about installing the all-metal storage tank:

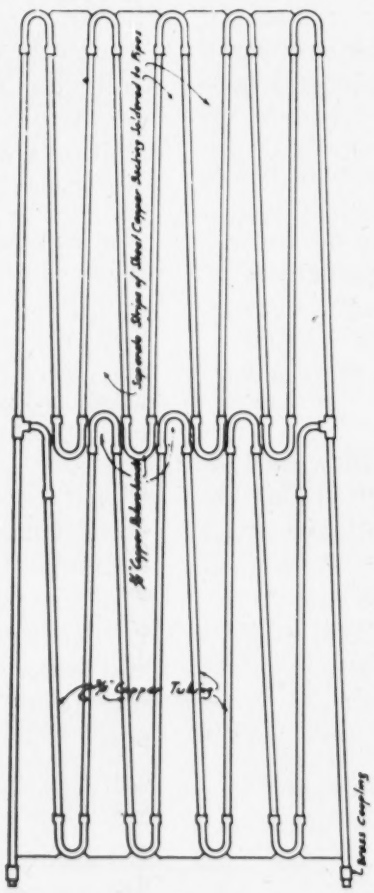
> We'd find a solid place on the roof (most of the houses at the time had flat roofs) and bolt the tank frame down, close the sides in with metal, and put the tank in. Then we'd fill in the space between the tank and metal box with Armstrong re-granulated cork. The cork was like coffee. Because it was a waste product, there was no problem in getting it. It was good insulation that would retain heat for 72 hours.

> If the customer wanted to keep his old electric heater, we'd valve it and leave it so he could use it as an auxiliary. We'd run pipes up through the roof and connect it to the tank.

A good retrofit job required accurately matching the tank capacity to the size of the solar collector. If the collector was too small for the tank, the consumer got only lukewarm water. If too large, he obtained a small amount of excessively hot water. Installers determined the size of the tank by the number of people in a home and their hot water needs. Heath describes how the company sized up a retrofit job:

> The first thing we would do was case the house, find out how many people lived there, and then we'd button them down. "Now don't mislead us," we'd tell 'em, "We're selling you a hot water service, not just a water heater, so we have to know the amount of hot water your family needs. How many in your family? Do you have a dishwasher? A washing machine?" etc., etc. Then we'd go from that knowledge to recommend the size of the system that they needed to give them an effective job. And if you didn't do that, you were out of luck.

A properly built single coil collector produced 1.5 to 1.7 gallons of 130°F water per square foot of collector area. The Duplex, the company claimed, supplied 1.7 to 2 gallons of 140°F water water per square foot of collector area. Sufficient hot water for three people called for a 60-gallon tank and a 10' x 4' single coil collector or a 7-1/2' x 4' Duplex collector.



NEW IMPROVED
SOLAR DUPLEX COILS
PATENT APPLIED FOR
MANUFACTURED BY
SOLAR WATER HEATER CO.
510 N.W. TWENTY-FIFTH STREET
MIAMI, FLORIDA.

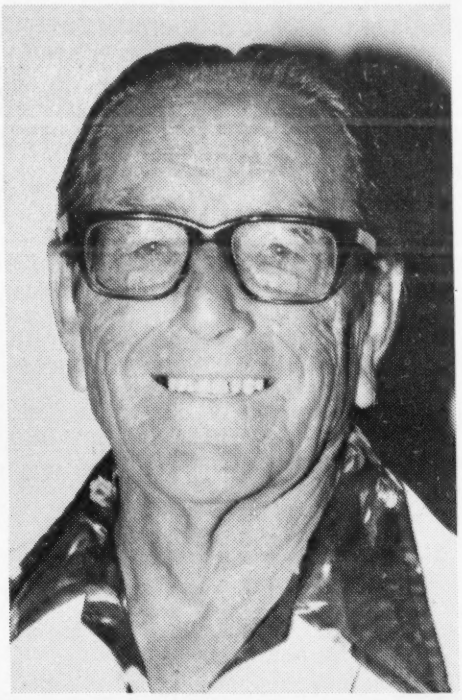
1934 – Federal Aid Boosts the Solar Market

The research and development undertaken by the Solar Water Heater Company could not have been better timed. In late 1934 Congress passed the Federal Housing Administration

(FHA) low-interest loan program. People could now buy a home for only $200 down and assume a mortgage mortgage requiring small monthly payments. The FHA program stimulated a new building boom in Florida. Projects of fifty to one hundred homes per development were not unusual.

At first the Solar Water Heater Company found it difficult to convince the builders to install solar heaters. As Heath recalls:

> The builders didn't want to bother with solar heaters. You see, they had to do a little extra work for us because we required a tank platform and a tank box that would hold the storage tank, which they wouldn't otherwise have to build. We could no longer just bolt a metal tank stand on the roof because nearly all the houses they were building now had sloping roofs. They had gotten away from flat roofs.



Harold Heath, sales manager of the Solar Water Heater Company, in the early 30s and now (age 78).

The Solar Water Heater Company did not give up. They took their case to the public. Word-of-mouth and advertising convinced the majority of new homebuyers that solar water heating meant cheaper hot water. At the time an electric water heater installed cost about $60 — approximately half the price of a solar water heating system. Considering the high cost of electricity, it was easy to convince potential homebuyers that the added initial costs of the solar unit were trifling compared to the money they would save over the years.

Armed with such information, Heath recounts, prospective buyers confronted developers. " 'And where's the solar water heater?' they demanded. If the reply was negative, the buyer responded, 'Oh well, we're not interested since we can buy a home that has one.' " It got to the point, according to Heath, that "the developers couldn't sell a dang house unless it had a solar water heater."

Consumer pressure succeeded, and the Solar Water Heater Company and the builders began to work harmoniously together. Heath explains the logistics:

> We would tell the builder where we wanted the tanks placed for best efficiency. The builders would prepare a platform for the tank box, as the tank had to be raised above the heater, and then build the tank box. The plumber ran the two hot and cold service lines to a location in the attic near the tank box. . . . Our men would go by to stick the tanks in, set up the heaters, and pipe them up. Then the builder would cover the outside with gray felt or roofing paper, nail some holding cloth, and then stucco it. It would look like a false chimney.

The retrofit market also grew. FHA Home Improvement Loans made it economically feasible for homeowners to buy solar heaters. Monthly payments for a solar heater came to less than what electric bills would have been. Terms were low — $6 per month, 4% interest, and no money down. Thus homeowners actually saved money while making payments.

Federal involvement created a new solar boom. "We were selling heaters like bananas," Heath remembers. "I'd take orders of fifty to one hundred a day." The **Miami Herald** reported on August 5, 1935:

> GENERAL MANAGER [of the Solar Water Heater Company] REPORTS ORDERS ON HAND LARGEST IN COMPANY'S HISTORY
>
> "We have no cause to complain about business," said C.F. Ewald, secretary and general manager. "At no time since we started in business . . . have we had so many orders at one time. Only this week we have received from Pittsburgh our second carload of glass since March and another large shipment of copper tubing is on the way, which is the third we have ordered this year."

The Solar Water Heater Company employed thirty-four workers — three secretaries, five sales people, eight installing crews of two each, and ten workers at the plant building coils and collector boxes and making fittings.

Until 1935 the company was the sole manufacturer and installer of solar water heaters in the Miami area. But as demand increased and the solar business developed into a major industry, "every Tom, Dick, and Harry decided they wanted in," was Heath's description of the intrusion of new firms into the ever-expanding solar market.

Plumbers jumped into the fray. Since they worked with pipe, a solar installation could be done simultaneously as they plumbed the house. Roofers also branched out into the solar business — they were on the roofs anyway, where most installations were made. And a knowledge of roofing was important so that the roof and solar installation were properly integrated.

U.S. Foundry got into the business since they already worked with copper — the major ingredient of the solar water heater. Other firms such as the Pan-American Solar Heater Works and Beutel's Solar Heater Company made solar water heating their principal or only

business. All told, there were about ten important companies active in the solar field.

The technology had not greatly changed since Ewald's innovations in the early 30's. The patent rights to the original California design had expired, and most everyone in the business produced a facsimile. The Duplex model, however, remained an exclusive of the Solar Water Heater Company.

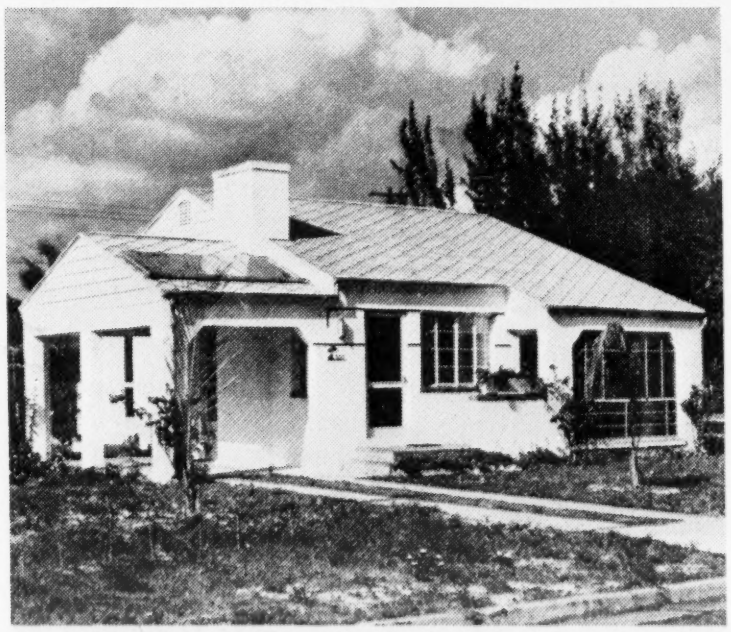
Competitors relied on brand names and minor improvements to differentiate their products. The Pan-American Solar Heater Company called their model the "Hot Spot." They marketed a flattened coil, boasting that this design was more efficient. Their sales brochure stated:

> We use one-inch soft copper tubing flattened to an oval width of one and three quarters inches exposed surface to the rays of the sun, whereas, the conventional heaters use three-quarter inch round copper tubing, a great portion of which is in a shadow at all times. NO HEAT UNITS OBTAINED WHERE THERE IS A SHADOW.

Pan-American's use of two layers of glass covering the top of the collector box was another selling point. This type of construction retained heat better than only one glazing.

Some companies cut corners to gain a competitive edge – to the detriment of unwary consumers. A few spot-soldered the tubing to the copper sheet rather than completely soldering these components. This strategy resulted in a cheaper product but with inadequate heat conduction.

Just to save a few dollars on metal supports, many laid the solar collector boxes directly on roofs. The boxes were not completely water tight, and when it rained water seeped into the box and then leaked out, collecting underneath. Without any air circulation to permit evaporation or room for the water to run off, the roof rotted and the bottom of the box rusted out. In nearly every case the heater eventually had to be removed.



Typical solar installation during the late 30's Florida building boom. The collector and storage tank (in false chimney) are well integrated into the overall building design.

Another price-cutting tactic was to reduce the size of the collector. Heath explains:

> A guy would develop a heater that was smaller than everybody else's so he could sell it to the builder for $100 where, say, we were getting $110. So the next guy would reduce the size even more and sell it for $95. It got to where they were cutting the size of the heaters and putting them in for 90 bucks; some were reducing them enough so they could sell them for $85. For economic reasons they were putting the dang things in too small. They weren't big enough to be efficient. People weren't getting enough hot water.

People started to complain. Because most of the solar heaters were financed through the FHA, consumers sent their gripes to the FHA office in Washington. The FHA responded by sending an investigator to Miami to check on these allegations. The investigation brought about the formation of an association of solar manufacturers which adopted standards regarding the quality of manufacture and installation, and guidelines to determine the correct heater size for each tank capacity.

Swift action from Washington restored consumer confidence and put the industry back on a stable course. "It helped out a great deal," Heath believes.

Their "houses" back in order, business continued to thrive. Eighty percent of the Miami homes built from 1937 to 1941 were equipped with solar water heaters. By then 50% of Miamians relied on the sun to heat their water.

Estimates on how many solar heaters were installed between 1935 and 1941 in the Miami area vary from fifteen to forty thousand units. More than five thousand solar systems were put in on the roofs of hotels, apartments, schools, hospitals, factories, and other buildings of size. Almost three thousand of these installations specified storage tanks of 2,500-gallon capacity.

The federal government bought some of the largest systems – the officers' quarters in the giant naval air station at Opalaka (near Miami) used solar heat, as did Edison Court, a federal housing project with 186 residents in Miami. The government realized that solar systems would hold down operating costs.

In 1941, solar sales outstripped conventional heater sales by two to one. "It got to where there was hardly a house in Miami that didn't have a solar water heater," Heath testifies.

But the Japanese bombed Pearl Harbor in December of that year, and war was declared. The federal government froze the non-military use of copper. As nearly everything that went into a solar heater was made of copper, World War II brought the industry to an abrupt halt.

1945 – The Postwar Decline

After the war many of the firms previously selling solar heaters returned to the business. Hot water consumption leapfrogged. Families grew. General Electric and Westinghouse convinced homeowners

they couldn't live without automatic dishwashers, automatic washing machines, etc. The solar collectors calculated for prewar hot water usage were now too small.

Several solar water heater companies introduced electric boosters to supply extra energy. Thermostatically-controlled electric resistance heaters were inserted in the side of the storage tank, about 1/3 from the top.

Had insufficient quantities of hot water been the only shortcoming of these systems, the introduction of boosters would have placated owners of solar water heaters. At the same time, however, water tanks began to burst. An electro-chemical reaction brought about by water flowing between two dissimilar metals – the copper tubing and the galvanized iron tank – ate away the tank. Water pressure and high temperatures exacerbated the electrolysis.

Many of the tanks burst eight to ten years after their installation; some lasted as long as fifteen years. Because the majority of the systems had been installed in the late 30's, the plague of tank failures began in the late 40's and lasted into the 50's.

Heath describes the consequences of a ruptured tank:

> The tank sitting over an important part of the house would generally go around 2 a.m. when the water pressure was up. The water pouring down on a very elaborate, expensively furnished home wasn't fun.

A lot of damage to interiors could have been avoided had drip pans been installed under the tanks as in California.

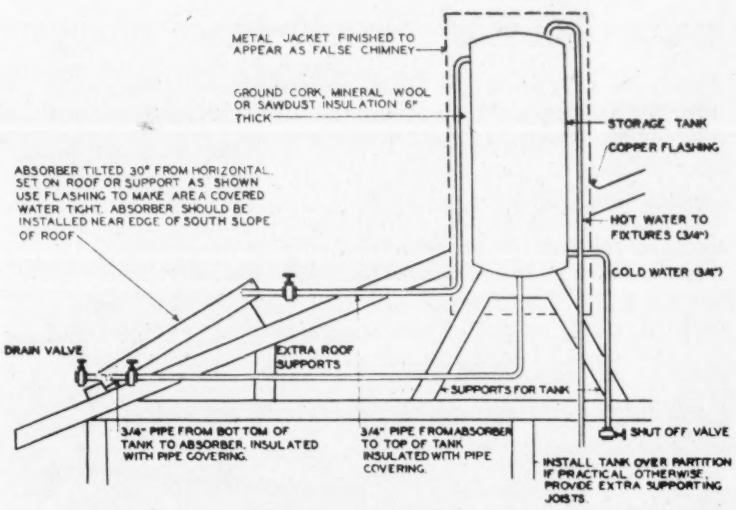
In fact, this whole catastrophe would have never happened if the companies had done better research or maintained closer contact with the engineering community. As early as 1935, an article in an engineering journal pointed out that to prevent tank corrosion all portions of the solar system ought to be constructed from the same materials. Unfortunately, no one in the solar heater business read the article.

One of the solar heater's strongest selling points, that it was trouble-free – you'd just put it up and that was it – was thus badly tarnished. Understandably, people became wary of purchasing solar heaters.

A sharp price rise also cut down consumer interest in solar heaters. Materials had become more expensive. The price of copper doubled in a decade, from 1938 to 1948; by 1958 it had tripled.

Labor costs also increased. An unskilled worker in the solar business who earned about $ .25 - $ .40 an hour in 1938 was being paid about $1.10 in 1955. The localized nature of the industry precluded large investments in labor-saving machinery. Furthermore, installations had to be done on-site, requiring many man-hours.

The price of solar heaters reflected the large increase in material and labor costs – a system that cost $125 in the 30's sold for $350 in 1948 and $550 in 1958. "Solar sort of priced itself out of the market," observes Heath.



Standard thermo-syphon installation

Meanwhile electric water heaters gained in popularity. Electric rates dramatically decreased after the war and continued to plummet until the early 70's. The electric company's large investments in capital equipment had previously made electricity expensive. With the large influx of newcomers after the war, especially servicemen based in Florida who stayed on, Florida Power and Light could diffuse their investment costs over a larger and continually growing base. Thus an electricity rate of less than $ .04 a kilowatt hour in 1948 had come down to under $ .03 by 1955.

The availability of the automatic electric storage water heater further bolstered electric's position with consumers in the water heating field. Gone were the days of fuss and bother with the old-style electric heaters. Large-scale production techniques also kept the price in line – in the early 50's, an electric water heater cost only $40 more than in 1938.

Solar was therefore no longer the bargain it had been in the 20's and 30's. Consumers found it cheaper to replace a broken tank with an electric water heater than with another tank. Payback on a solar system ballooned to eight years by 1955; the probability of needing a new tank in eight to ten years wiped out any financial advantage over electric.

Florida Power and Light rode the crest of the rising discontent with solar, aggressively promoting the electric water heater. The company displayed electric heaters at their offices and offered to install them free. Builders putting in electric water heaters along with other electric appliances received promotional assistance. Rates were also structured to promote consumption.

"Everything was sort of against solar at the time," Heath remarks sadly.

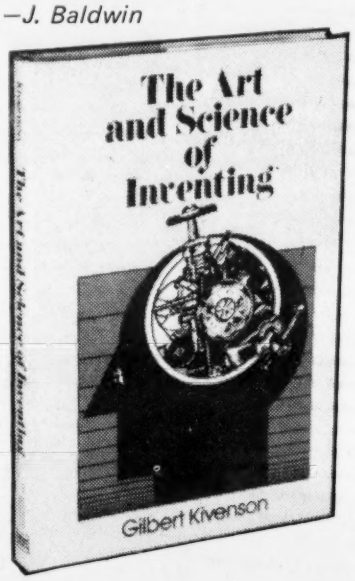
By the late 50's the once-thriving solar industry found itself relegated to a service business. The companies that stayed alive remained busy flushing out coils, replacing broken glass, and putting in new tanks for people who wanted to continue heating their water by the sun. Many preferred to keep their solar heating system rather than switch. They were happy with what they were getting – free hot water. Today, there are still more than fifteen thousand solar water heaters in service in southern Florida. ■

The Art and Science of Inventing

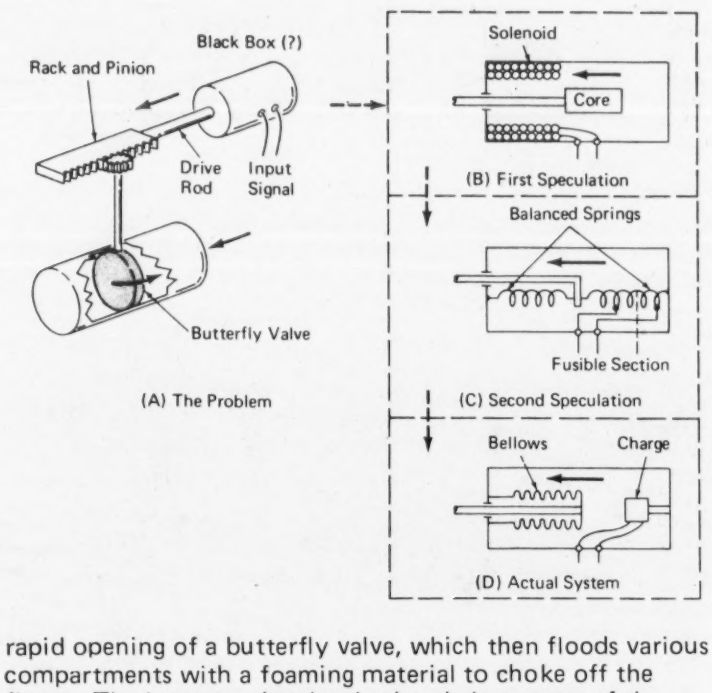
This is the first book I've encountered on this subject that matches my actual field experience. The author wishes to prevent the inexperienced innovator from following "pre-doomed paths." For a good start he introduces things with "Some Fundamental Principles of Technology"; one of the best expositions I've seen. That chapter alone should be required reading for the wind and solar experimenters. Equally nifty chapters on model making, prototyping, testing, patents, and design procedure add up to a book that is actually useful! There is a particularly good section on avoiding dead-ends and self-defeating activities. Many of the professional hassles of my life could have been avoided if this book had been available years ago. Ah well . . .

—J. Baldwin

The Art and Science of Inventing
Gilbert Kivenson
1977; 195 pp.
$11.95 postpaid
from:
Van Nostrand Reinhold
Order Dept.
7625 Empire Drive
Florence, KY 41042
or Whole Earth



In the synthesis technique detailed knowledge of the present state of the art is carefully avoided. The "little black box" concept is a convenient means for applying the synthesis method. The device is conceived as being a two part assembly: a visible part operating in an obvious way and an invisible mechanism contained in a black box. The synthesis starts by speculations as to what might be housed in the black box in order that the overall result can be obtained. After a number of possibilities have been explored, the inventor now permits himself to learn how the actual mechanism is constructed. If he has exactly matched the latter with one of his suppositions, he has brought himself up to date on the state of the art in a very short time. If his suppositions are more primitive, he has only to learn an incremental amount to achieve current status. If one or more of his suppositions is advanced over current status, he has invented an improvement. A simple example is shown in the figure. The item in question is a quick opening valve to be used for putting out aircraft fires. An electrical signal from a fire detector causes



rapid opening of a butterfly valve, which then floods various compartments with a foaming material to choke off the flame. The inventor sketches in the obvious parts of the mechanism — the valve, rack-and-pinion operator, and the drive rod — and a black box which contains the unknown. His first speculation is that the end of the drive rod terminates in an iron core and that the box contains a solenoid (Fig. B). The application of current to the input leads creates a magnetic field which pulls the core into the solenoid. Previous experience with solenoids indicates that the method is workable but would require relatively large currents. He now considers some form of stored energy. A charged condenser might be made to "dump" through the solenoid and thus produce a high thrust for a short period. He then thinks of other storage methods including stretched springs. This second possibility, using two balanced, stretched springs, is shown in Fig. C. The signal wires are welded to one spring. An application of current fuses the latter and allows the drive rod to be pulled over by the second spring. This makes the apparatus non-resettable, but the nature of the application would justify this. The actual device is now dissected and found to contain a bellows and a small charge of explosive. Setting off the latter increases pressure on one side of the bellows and causes the valve to open. The original intention has obviously been to open the valve very rapidly, but some delay time is inherent in the transfer of explosive energy to the gas in the cylinder and in the inertia of the parts. The spring concept might be just as fast-acting if the fusible portion could be made small enough to allow very rapid heating. Further consideration shows that only one spring and a thin, fusible "restrainer" might do the job. The spring method might also be less expensive than the presently used scheme, in view of its simplicity.

Buying Solar

The Feds have come up with a simple booklet that explains household solar equipment and its economics to the completely uninitiated homeowner. At the price it can't be beat.

—J. Baldwin

Buying Solar
(No. 041-018-00120-4)
Federal Energy Admin.
1976; 71 pp.
$1.85 postpaid
from:
Superintendent of Documents
U.S. Govt. Printing Office
Washington, D.C. 20402
or Whole Earth

Since the "average" individual moves frequently, which involves resale of his present home, it is important to consider the effect of previously installed solar equipment on the resale value of the home. Most economists agree that the cost of "conventional" energy will rise more rapidly than the general rate of inflation in the future. This means that the rate at which solar equipment saves money for the user will become greater as time goes on and that the "pay out" to the user 5 or 10 years from now will be materially better than it is today. This should make a residence with a solar system already installed attractive to the next buyer. The next buyer would compare the price of a solar-equipped house with the total potential cost of an unequipped house (including the cost of retrofitting it with solar equipment). It will always cost more to retrofit a solar system to a previously built house than to incorporate a solar system in a new house. The extra cost of retrofitting tends to become an element of "appreciation" in the value of the previously equipped house.

Now that's continuity

Gentlemen:

Clarence May Kemp, who was referenced in your Fall 1977 issue ("Solar Water Heaters in California, 1891 - 1930"), was my great grandfather and founder of this firm, established in 1877. . . .

Very truly yours,

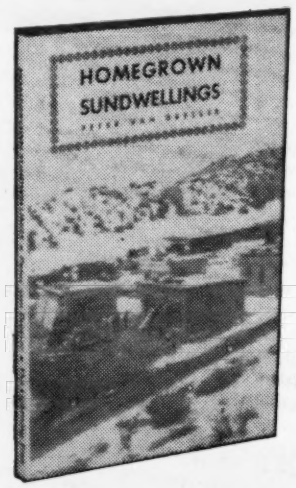
W. Kemp Lehmann, President
The C.M. Kemp Manufacturing Co.
Glen Burnie, Maryland

Homegrown Sundwellings

Peter Van Dresser is one of those men who have been telling us for decades that we must take care of our environment and be less wasteful. He's built one of the two oldest solar houses in this country. Age and frustration haven't slowed him down a bit, and he's fortunately outlived public indifference. This book chronicles some of his most recent explorations of the possibilities inherent in simple solar architecture fashioned from local materials. (In this case adobe.) It's not a manual, it's an attitude-adjuster. More good stuff from New Mexico.

—J. Baldwin

Homegrown Sundwellings
Peter Van Dresser
1977; 135 pp.
$5.95 postpaid
from:
The Lightning Tree
P.O. Box 1837
Santa Fe, NM 87501
or Whole Earth



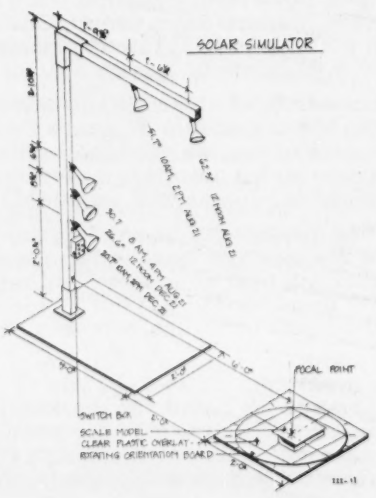
The point should be insisted upon that domed, warped, hyperboloid and similar surfaces dear to avant-garde architects, *which must at the same time be rain- and weather-tight*, are very difficult to execute in low-energy indigenous materials. For their success they are dependent on the use of high-energy plastic membranes, sealers, foamed or sprayed fillers and coatings, aluminum extrusions, plywood and the like. Additionally, it is very difficult to incorporate weather-tight window openings and solar collecting panels into such curved or warped surfaces.

Energy Conservation Code Workbook

The City of Davis, California actually voted in a "solar building code!" (CQ, Fall 1977, p. 90). Though not especially radical to those interested in ecological righteousness, the code has brought screams of outrage (as well as code-meeting neighborhoods) from developers (CQ, Summer 1977, pp. 62-65). This booklet is intended to facilitate application for building permits. The preparation of this information was sponsored by HUD as part of the work done under the grant that backed the studies resulting in the code. Give credit where it's due: this enterprise has largely been done right! Inevitably, this demonstration will be the model for many other community energy codes.

—J. Baldwin
[Suggested and partially prepared by David Bainbridge]

Energy Conservation Building Code Workbook
Marshall Hunt, Ed.
1976; 122 pp.
$6.00 postpaid
from:
City Hall
Davis, CA 95616

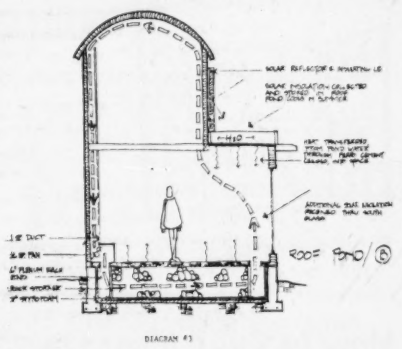


Preliminary Comparison Study of Four Solar Space Heating Systems

During the summer of '76, four simple cottages were constructed by the staff and students of the Farallones Institute. Each structure has a different type of solar heating system. The similar design and identical orientation of the cottages permits comparative studies; the designs can be "raced," and there ain't nothing like a race to see what's what. This report is the results of two weeks of heavily instrumented racing. Hour by hour analysis is provided, along with comments and suggestions for increased performance. The difference between theory and actual performance should be particularly interesting to solar builders. This is the sort of experimentation that is so badly needed. A series of such projects would soon have solar architecture out of the nail-biting phase.

—J. Baldwin

Preliminary Comparison Study of Four Solar Space Heating Systems
Peter Calthorpe with
Bruce Wilcox and
Don Stauffer
1977; 52 pp.
$3.00 postpaid
from:
Farallones Institute
Rural Center
15290 Coleman Road
Occidental, CA 95465



Wind Power Access Catalog

The Fall issue of the ever-better **Wind Power Digest** *(CQ Fall '75), includes a fine catalog of wind machines and related hardware. The publisher cagily offers this only as the first issue of a new subscription and it will not be available as a back issue. If you were waiting for a good reason to subscribe, you have no excuse now.*

—J. Baldwin

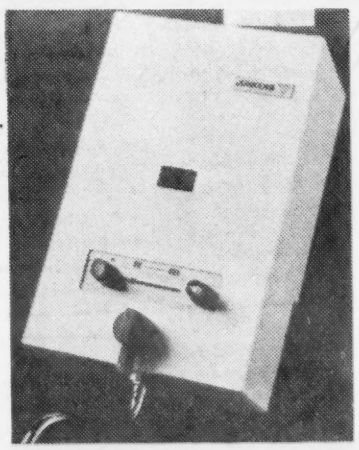
Wind Power Access Catalog
(A supplement included in the Fall 1977 issue of **Wind Power Digest**)
$6.00/yr (4 issues)
from:
Wind Power Digest
54468 CR 31
Bristol, IN 46507

Junkers Gas Water Heaters

World travellers are probably familiar with the "flash" hot water heater. It has lots of advantages: no tank, small size, no pilot light, less hot water pipe system, no big tank of water just sitting, no hot water left unused in the pipes, and no cold water wasted waiting for hot water to arrive. Sounds good, doesn't it? But there have been reliability problems that would be unacceptable to most Americans. I can't vouch for this one either, but it's made by Bosch, a company noted for Good Stuff. If I were building a house, I'd certainly check it out (they're priced $177 - $377). If you're using one, we'd appreciate hearing of your experiences with it.

—J. Baldwin

Junkers Gas Hot Water Heaters
Information from:
Pressure Cleaning Systems, Inc.
612 North 16th Ave.
Yakima, WA 98902



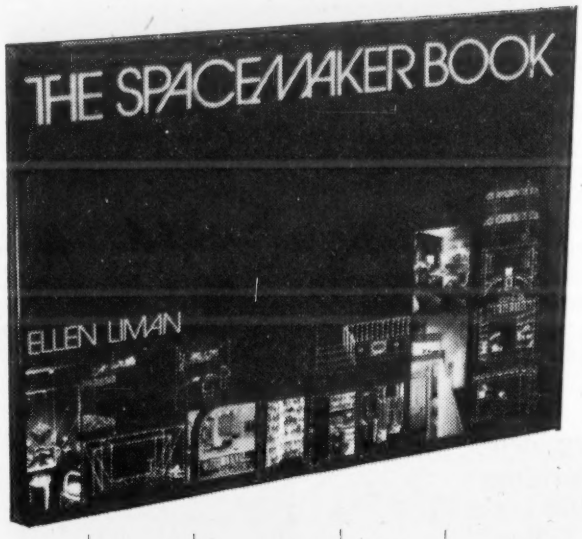
The Spacemaker Book

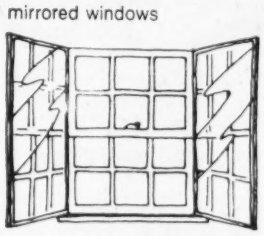
Another excellent collection of ideas intended to make living in relatively tight places seem less tight. The ideas here are less oriented towards one-room living (CQ Spring '77) than towards general canniness in space use and visual spaciousness. Most of this will be old hat to mobile home dwellers and to Europeans (especially Scandinavians) who have been doing this sort of thing for years. Replace expensive, resource-eating volume with compact cleverness. Exceptionally good drawings.

—J. Baldwin

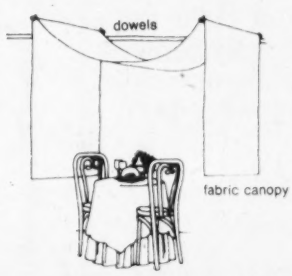
The Spacemaker Book
Ellen Liman
1977; 120 pp.
$9.95 postpaid

from:
The Viking Press
299 Murray Hill Parkway
East Rutherford, NJ 07073
or Whole Earth

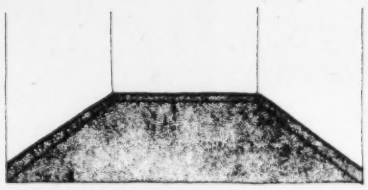


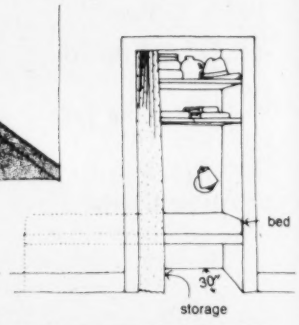


a bay effect



library closet


to enlarge floor, paint
baseboard same color as floor



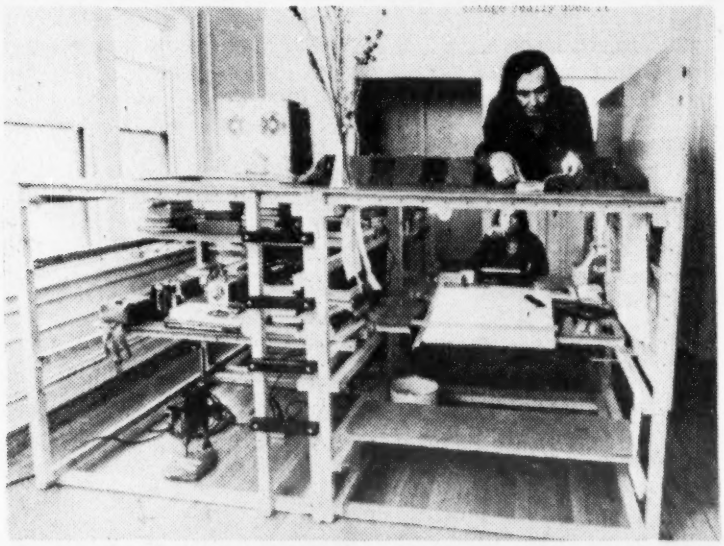
How to Build Your Own Living Structures

You may remember Ken Isaacs from Popular Science Blueprint Projects of the late '60s series. He has compiled his years of micro living structure construction into a work manual at long last. Included are detailed plans for his famous Superchair, the Microdorm and the Space Module, to name a few. Using his book and a handful of 12 year olds equipped with a second-hand drill press, we have built four such structures using discarded motorcycle crates as the raw material. It's the ol' Tinker-Toy-basic-module-building-unit trip. One soon learns elementary mass production techniques in creation of his own personal Industrial Revolution. The book assumes that the reader knows nothing of woods, tools and connections — this I appreciate. Buying tools at farm sales, understanding wood terminology and identifying a "real" hardware store are all part of his package, along with a rap on the most important tool, "Head-tooling." Here is nomadic, modular, 3D living on a "2X4" budget.

—Joe Eddy Brown

How to Build Your Own Living Structures
Ken Isaacs
1974; 136 pp.
$4.95 postpaid

from:
Crown Publishers
One Park Ave.
New York, NY 10016
or Whole Earth



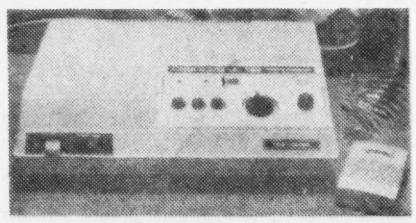
3-D LIVING. Living Structures are a way for close people to be close in a single space without getting in each other's hair. The level change really does it.

Gadget

This "newsletter for grown-up kids" features highly subjective user reports of the latest technological temptations available to the American Consumer. The tests are in marked contrast to the pickynit documented programs of **Consumer Reports**. **Gadget***'s total criticism might consist of a laconic "nobody on our staff liked it." This is thin soup, considering that* **Consumer Reports** *costs $4 less per year. But* **Gadget** *reports on products as soon as they appear. Sometimes they show something that has only been on the market a matter of weeks. This can be an advantage if you value being the first on your block to have the latest equipment, or if you are into electronic devices which obsolete themselves so quickly.* **Gadget** *has no ads.*

—J. Baldwin

Gadget
$15/yr (12 issues)
$2.00/single copy
from:
G.A. Publications, Inc.
116 West 14th Street
New York, NY 10011



Code-A-Phone Telephone Answering System Model 1400. Manufactured by: Ford Industries, Inc., 5001 S.E. Johnson Creek Boulevard, Portland, OR 97206. Purchased from: JS&A National Sales Group, One JS&A Plaza, Northbrook, IL 60062. Price: $259.95 (with remote control pager); $179.95 (without remote control pager).

Our search for an acceptable answering machine has ceased with the acquisition of Ford's Code-A-Phone 1400. After six months of use, we can report with confidence that this handsomely styled unit does everything an answering machine should do, does it well, and does it reliably. . . .

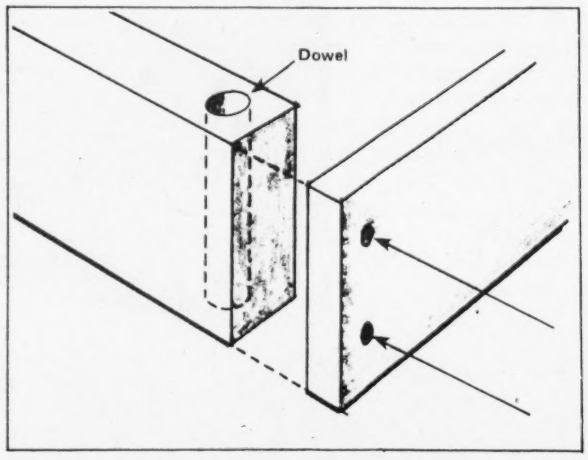
Your message can be any length, up to 30 seconds. Even if the message you want to leave is only 10 seconds long, the caller will hear your 10 second message followed immediately by a beep, instead of your 10 second message followed by 20 seconds of silence, followed by a beep.

In addition, you can adjust the unit to answer on either one or four rings. This allows you to set it on four rings even when you are home. So no longer do you have to worry about forgetting to set your phone answering whenever you leave your home or office. And if you pick up your phone before the 4 rings are complete, the unit will not be activated.

Handtool Handbook for Woodworking

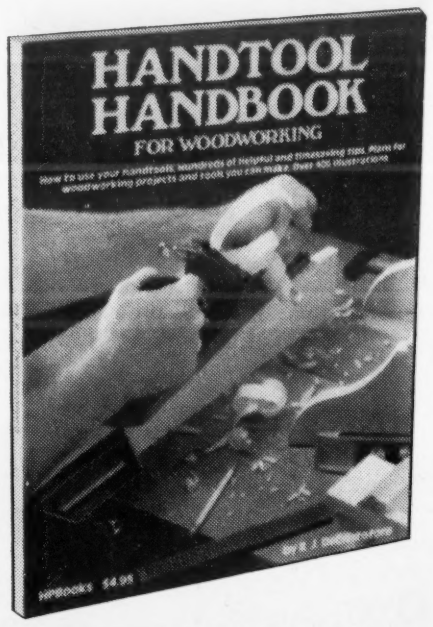
Tool-use books must be among the most deadly boring literature available in our society, probably because they are written for retarded seventh-graders. The few books that avoid such an accusation tend to be written in the imperious tone of a retired Master Sargeant shop teacher. I for one simply can't read them. An exception is available. R.J. DeCristoforo, who brought us his excellent **Complete Book of Power Tools** *(CATALOG, p. 521) has done it again for common woodworking hand tools. The first page I opened to showed me something I didn't know (the dowel trick below).*

—J. Baldwin



A dowel can be placed in a drilled hole to help hold screws driven into weak end grain.

Handtool Handbook for Woodworking
R.J. DeCristoforo
1977; 184 pp.
$4.95 postpaid
from:
H.P. Books
P.O. Box 5367
Tucson, AZ 85703
or Whole Earth



Why Govt. surplus is cheap

This is irrelevant, but good: friend of a friend in San Diego bought a big steel cabinet-machine at a government surplus place, ($50). Took it home & tried all the knobs & switches; nothing worked. Pried open the back, and saw some connectors out of their sockets. Plugged them in. Tried a switch. Machine whined and began to clang — loud. Tried more switches. It wouldn't shut off. After ten minutes, a siren started — deafening. Tried all the knobs & switches. Wouldn't stop wailing. He got scared, and ran out. His house blew up. It was a U.S. Navy self-destruct bomb designed to destroy captain's cabin & all papers, in case of capture.

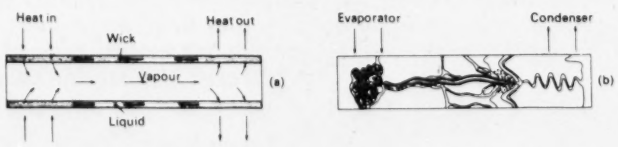
Will Baker
Davis, California

Heat Pipes

If these intriguing devices have aroused you to a level not satisfied by a few paragraphs in Popular Science, then this very technical report should keep you busy for awhile. This is a very complete presentation; it includes a fat bibliography, a section brushing you up on the physics involved, and even reveals manufacturing techniques. Happily, it's readable.

—J. Baldwin

Heat Pipes
P.D. Dunn and D.A. Reay
1976; 317 pp.
$18.00 postpaid
from:
Pergamon Press, Inc.
Maxwell House
Fairview Park
Elmsford, NY 10523
or Whole Earth



Diagrammatic representation of a heat pipe (a) and an eccrine sweat gland (b).

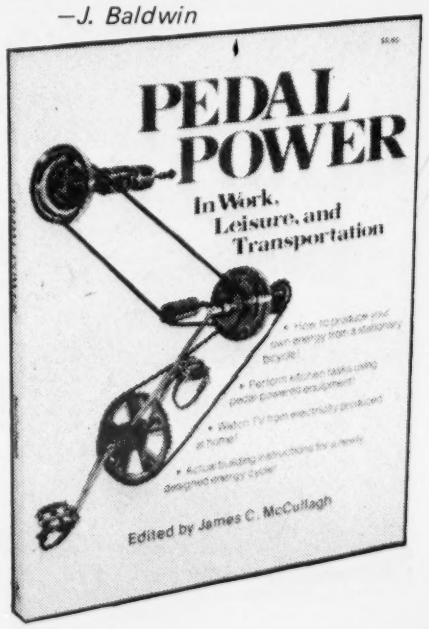
The hypothesis put forward is that there is an analogy between the functioning of a sweat gland and the operation of a heat pipe. Several assumptions have been made concerning the resting sweat gland, based on observations of their behavior. Most important is the assumption that the resting eccrine sweat gland functions in thermoregulation, and hence water is being continuously secreted by the coils. In order to provide efficient cooling this water must be evaporated near the base of the duct. Other observations lead one to deduce that a refluxing of water back down the sweat ducts exists, assisted by capillary attraction in the mucilaginous lining, and by osmosis. (The resting state occurs without secretion of liquid onto the skin surface, which is active sweating). The model presented, namely evaporation of water, recondensation and flow of the condensate by, in part, capillary action back to the 'evaporator' has an equivalent in engineering heat transfer, namely the heat pipe.

Pedal Power

This collection of pedal powered devices and proposals for a wide variety of untried applications will fascinate anyone who has nibbled at the idea of people-powered machinery. Frankly, I'm not too sure where all this is headed. Some of the ideas seem to have the sweating off of middle class guilt as the main function. Other contraptions will soon have their overworked human energy source hotfooting it down to the local Briggs & Stratton store. And a good many of the machines are not very well designed; provision for chain tension and operator cooling are inadequate. Overall, though, this book is representative of a healthy shift in attitudes, and is certainly moving in a good direction. At the very least, such concerns tend to force users of technology to take a closer look at what they are actually doing. Serious experimenters will probably also wish to consult **Bicycling Science** *(CQ Summer '75). Rodale is also marketing several pedal powered machines.*

—J. Baldwin

Pedal Power
(In Work, Leisure, and Transportation)
James C. McCullagh, Ed.
1977; 133 pp.
$4.95 postpaid
from:
Rodale Press
33 East Minor
Emmaus, PA 18049
or Whole Earth



Craft

Stained Glass Primer, Vol. II

(See EPILOG, p. 557, for Vol. 1)

The beauty is in the instruction: advanced techniques in simple, straightforward language for the artist-student with a small studio who already has the basics. Covers making easels and easel waxes, printing and surface abrading techniques, reinforcing and installing stained glass, and includes a short chapter on kilns and firing. Next best thing to an apprenticeship. But the prize: the annotated bibliography! It's his extensive glass library categorized and commented on both informatively and with feeling — lively reading and an invaluable resource.

—Diana Sloat

Stained Glass Primer, Vol. II
Peter Mollica
1977; 207 pp.
$3.95 postpaid

from:
Mollica Stained Glass Press
1940 A Bonita Ave.
Berkeley, CA 94704
or Whole Earth

The heavy, dark, usually opaque, black lines painted on stained glass windows to add detail, such as facial features and drapery folds, etc., are traced from the original cartoon onto the glass. Occasionally, this type of painting is done free-hand while the glass is stuck up on the easel, but usually it is done by laying the glass on the cartoon and tracing. A simple light box is very handy for tracing, especially when the glass is dark.

New Glass

A sampling of West Coast stained glass with statements from each artist. A particularly valuable book in a field hoary with centuries-old tradition, where examples don't travel well. Seeing the new work is a bit difficult. Much of it is intimate, its magic tied up with its surroundings and light source. Hard to roll all that up for shipping to a local museum.

—Diana Sloat

New Glass
Otto B. Rigan
1976, 1977; 117 pp.
$7.95 postpaid

from:
Ballantine Books, Inc.
457 Hahn Rd.
Westminster, MD 21157
or Whole Earth

Envisioning a Marriage, 1975. Kathie Stackpole Bunnell.

Stained Glass From Mind to Light

A stained glass artist and teacher talks eloquently about the special design problems and possibilities of glass in a way that is meaningful both practically and aesthetically. What makes the book is the way the concepts come alive in the illustrations drawn from the author's own work as he moves from idea to cartoon to finished panel. His work is beautiful — I wish his writing were as consistently so.

—Diana Sloat

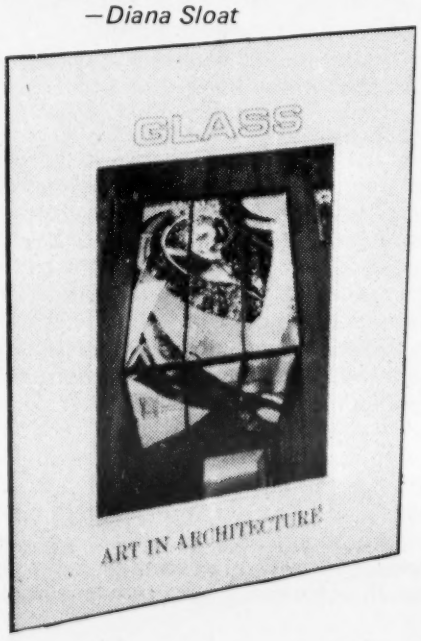
Stained Glass from Mind to Light
Narcissus Quagliata
1976; 244 pp.
$13.95 postpaid
from:
Mattole Press
P.O. Box 22324
San Francisco, CA 94122
or Whole Earth

Motion backwards in space can be achieved by braiding glass pieces or creating a series of discs (that might be different shapes as well) and making them gradually recede. Finally, lines can define tubular motion through space. This concept is especially useful in creating the stem of any organic form. These examples are presented to counter the commonly held belief that a window should be flat, like a carpet hanging on the wall. With the use of line only, and without the help of color, you can make the picture plane come out, recede or undulate to your liking.

Glass

Formerly **Glass Art Magazine**, *with a new format and more focused, it's the "one-and-only" in the field, published quarterly with an annual. Expensive but worth it for knowing what's going on. (Haven't seen the new offshoot* **Glass Studio**, *soon to be published, but sounds interesting.)*

—Diana Sloat



Glass
Fred Abrams, Ed.
$24/yr (quarterly)
(includes annual)
$5.00/single copy

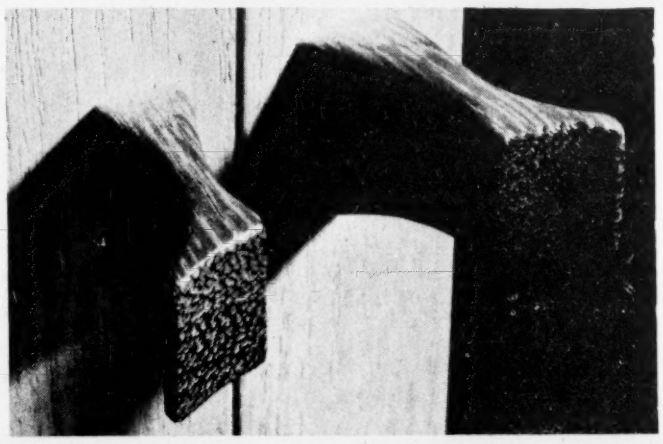
from:
Glass
7830 S.W. 40th Ave.
Suite 2
Portland, OR 97219

A Cabinetmaker's Notebook

A Cabinetmaker's Notebook *is especially poignant for woodworkers and cabinetmakers, but would be valuable to any craftsperson seeking an individual style. Krenov advises us to slow down, look around at existing pieces, think about what makes them work, and most important, get building. The book is not a how-to book and none of his pieces are drawn. It's more of a journal (notebook) filled with thoughts, discoveries, musings. I am a struggling guitar maker and the book is like a breath of cool air amidst all the hassles of getting set up.*

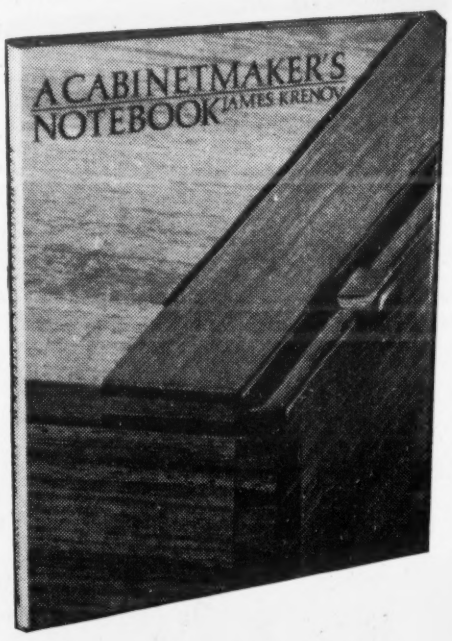
—Thomas Rein

Of all the tools we cabinetmakers have around us, the ones that are most neglected are knives. . . . Most knives have an awkward thick blade with a much-rounded tip: ours should be nicely tapered, thin and graceful. The whole knife with its definitely shaped handle is made to cut not away from, but *towards*. The carving we are talking about, small shapes and neat little roundings, minute details – this kind of carving is best done towards you. It is done with a very special action. You use your hand rather than your arm.



Detail of Swedish yellow ash cabinet. Handles, carved from secupira, encourage one to use finger-tips when opening the small doors.

A Cabinetmaker's Notebook
James Krenov
1976; 132 pp.
$13.50 postpaid
from:
Van Nostrand Reinhold Co.
Order Dept.
7625 Empire Drive
Florence, KY 41042
or Whole Earth

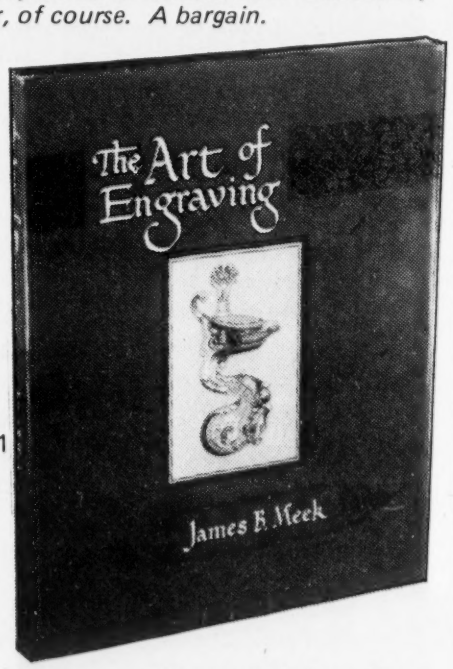


The Art of Engraving

The only book available which will actually show you how to engrave. Fortunately, it was written by a man who cares about the beginner. No mysteries or secrets here. Beautifully illustrated, by the author, of course. A bargain.

—David L. Kitterman

The Art of Engraving
James B. Meek
1973, 1977; 196 pp.
$19.95 postpaid
from:
Brownell's, Inc.
Route 2, Box 1
Montezuma, Iowa 50171
or Whole Earth



I am convinced that almost anyone with an aptitude and a serious desire can learn to handle the tools, the chasers hammer and graver. The hand-propelled graver is another problem. This problem has now been solved by a new miniature pneumatic hammer which allows the use of both hands without that feeling of insecurity that all beginners experience when starting to engrave by hand.

The Art of Bolivian Highland Weaving

A monumental and challenging work covering a particularly beautiful little known area of weaving. Comparable in scope to D'Harcourt's **Textiles of Ancient Peru** *(EPILOG, p. 563) for contemporary Bolivian weaving, it is by contrast set up to teach, with a rare combination of careful research, competence in textile analysis, and the experience of having searched out, lived and worked with weavers of particular regions of Bolivia, learning their techniques.*

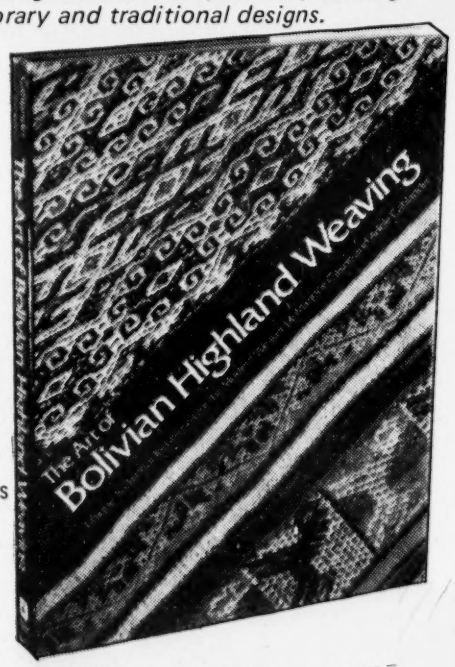
The pebble and twill weaves and the complex structures which produce them as well as the animal and geometric figures are presented as weavers there learn them, by developing the necessary dexterity through doing a series of bands, each increasingly intricate in structure but more and more exciting to learn. The text and diagrams are extremely clear and the color plates downright inspiring. Instructions culminate in how to weave the small "chuspa" (coca leaf bag), the awayo (carrying cloth), and how to adapt traditional methods and equipment for use on inkle and floor looms. The appendix includes an extensive bibliography, supplier's list, glossary and instructions with grids and examples for planning and diagramming contemporary and traditional designs.

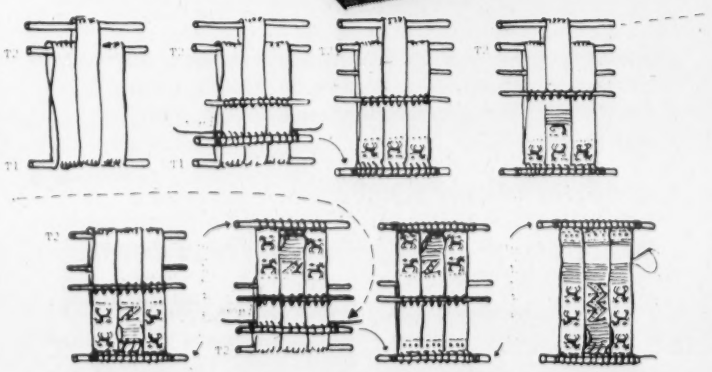
It's an exceptional book.

—Diana Sloat

The Art of Bolivian Highland Weaving
(Unique, Traditional Techniques for the Modern Weaver)
Marjorie Cason and Adele Cahlander
1976; 216 pp.

from:
Watson-Guptill Publications
2160 Patterson St.
Cincinnati, OH 45214
or Whole Earth





Job Sharing is Good

for the employee, the employer, the work, and the society

BY ROBERT GILMAN

Seemingly simple structural changes in the organization of a society often have vast and complex cultural ramifications. All too often these changes are imposed without understanding or concern for these ramifications, and the results range from innane to brutal. Yet occasionally there are changes that permit the formal structure to catch up to informal growth within a culture and thereby permit and produce a whole range of beneficial changes. Job-sharing may well be the change of this kind that is needed today.

WHAT IS JOB SHARING?

In its simplest terms it is a formal intentional arrangement that permits more than one person to hold, on a part-time basis, a job in the cash economy which is full time. It is a remarkably flexible concept in terms of the time cycle of the sharing, the number of people per full time position, and the types of occupations to which it is applicable. The time sharing can range from a division of the day ("You work mornings and I'll work afternoons.") to a change every few years. The optimal period will vary from job to job and from one personal situation to another. Nor is job-sharing restricted to filling each full time job with two, three, or some whole number of people.

A few years ago I met a doctor in Eureka who shared a practice with two other doctors with the arrangement that each of them work an 8 month period each year. Their work periods were staggered so that the three people maintained two full time positions. Other combinations such as 4 people to 3 positions, 5 to 4, 5 to 3, etc., are all possible. It is hard to imagine an occupation that would not be amenable to some form of job-sharing as long as the cycle period was properly chosen. This is a crucial issue that we will return to later. Otherwise most of the barriers to a much broader use of job-sharing throughout the economy are psychological and informational relics of an outdated cultural mythology.

It should be noted that job sharing is also socially flexible (micro-adaptive) in the sense that its use or non-use can be based on individual, small group, or at most, corporate decisions. No legislation, no court cases, no general social consensus is needed. (There may be some need for corrective legislation to remove the bias against "part-time" work, but this is a subsidiary point). Yet because the weight of the past stands against it, it does now need facilitation.

WHY WOULD AN EMPLOYEE WANT TO JOB-SHARE?

From a traditional point of view nothing could be more absurd than for an employee to deliberately choose to lower his cash income and force himself into "semi-unemployment" by job-sharing. The traditional view assumes that specialized activity in the marketplace is the most efficient (economically productive) use of our time, and that when it comes to cash, more is obviously better. These assumptions can be and are being called into question from two major points of view.

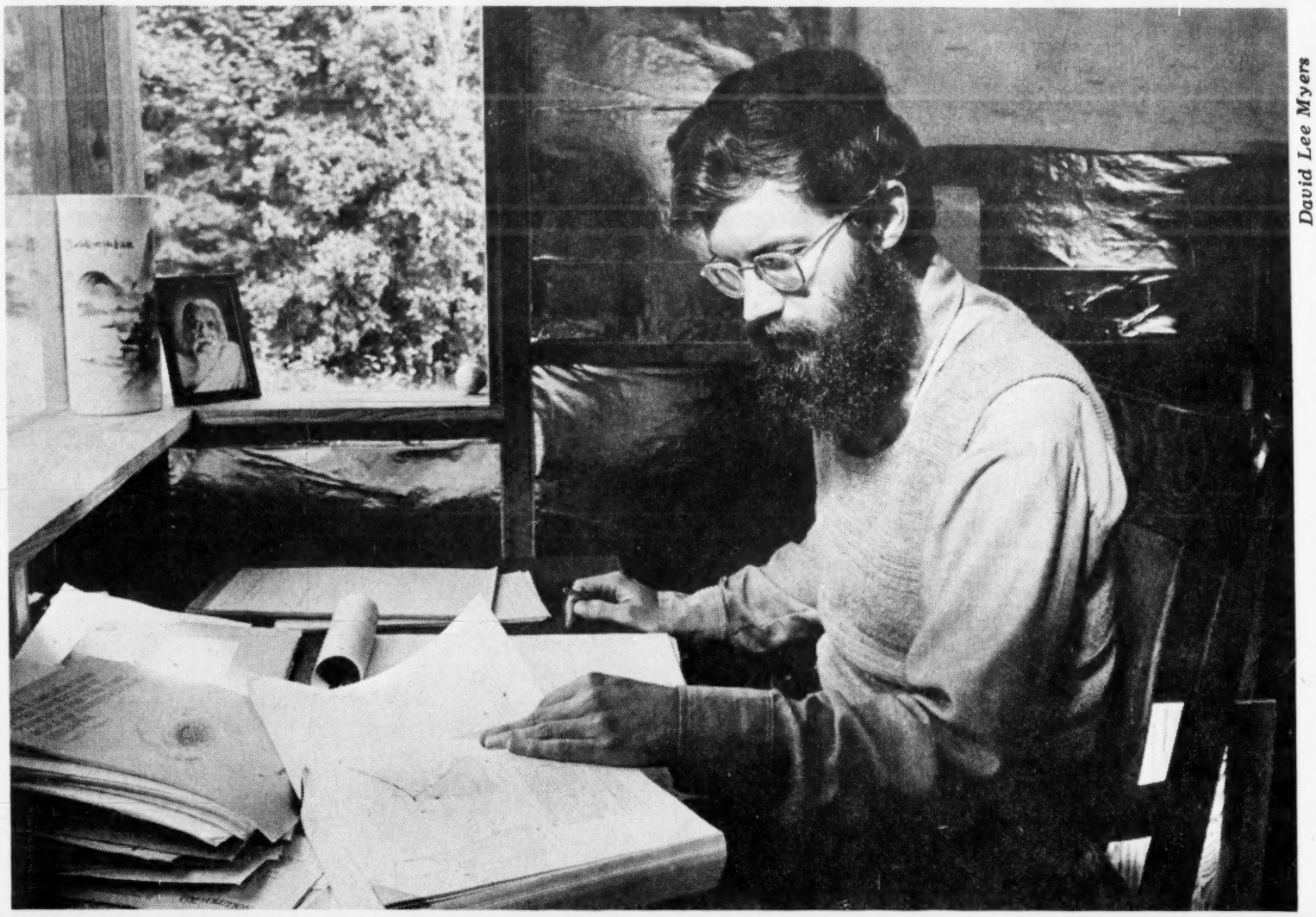
Human activities require both time and resources. Traditionally most people have felt limited by a lack of resources, but the evidence is all around us that an increasing number of people feel that the pendulum has swung too far, and beyond a certain level of income they would prefer to keep their personal time rather than trade it in for more cash.[1] The crucial question about job sharing for these people is, can a part time income meet their needs? The question has so many personal variables that it has no general answer, but what can be said is that an increasing group of people are finding the answer to be yes.

The other point of question has received a major boost from Scott Burns with his analysis in **The Household Economy**.[2] The long-ignored productivity of the household has considerable and growing potential. Increasingly the most economically productive role (in terms of delivered goods and services rather than cash flow) will be the person who is a part-time specialist in the cash

I grew up 20 miles due northwest of Central Park (NYC) in suburban N.J., was an undergraduate at Berkeley ('63-'67) with all the benefits of that era, then went to Princeton ('67-'69) for my Ph.D. in astrophysics. During the 8 years since I have spent, off and on, almost exactly half my time professionally doing both research and teaching in astronomy. This is still very much part of my life, and I currently have a paper submitted to the **Astrophysical Journal** *on quantum corrections to general relativity and their implications for black hole dynamics.*

During the other half of my time I've been a furniture maker in southwest Washington across the Columbia from Astoria, spent over two years, off and on, in Taos County, N.M., and most recently have been building a solar heated home in the North Olympic Peninsula in Western Washington. It has been a tremendously rewarding and growthful lifestyle, and I know, from my own experience as well as that of others, that it can work.

—Robert Gilman



David Lee Myers

The author as astrophysicist – half-time.

economy and a part-time generalist in the household rather than just a full-time specialist. As a personal example (shared by many others), I am in the process of building a house I designed for a materials cost that is one fifth if not smaller than what it would have cost me to have a similar house designed and built by others. From a strictly economic point of view – including the tax burden of paying others, the generally lower property taxes on owner-built homes, interest rates on loans, etc. – an owner/builder has to be pretty inefficient to lose. The importance of the household generalist is also evident in the case of a good homemaker (of either gender) – just try replacing all those goods and services via the marketplace. For those who know how to be productive in the household economy, the crucial question about job-sharing is, can it provide a more productive allotment of time than the full-time marketplace or the full-time household alternatives? Burns' analysis bolsters the experience of many that increasingly the answer is yes.

Why enter the marketplace at all? Some don't and wouldn't, but for many the job side of the time-sharing would be as important as the personal time side. Besides the obvious benefits of some cash income, specialized marketplace jobs offer many benefits (creative outlets, contacts with people, discipline, participation in the productive activity of a larger than household group, etc.). For some people those considerations even outweigh the importance of the income. The goal is a better balance, a middle path, and for many, job-sharing can provide just that.

WHY WOULD AN EMPLOYER WANT TO JOB-SHARE?

The most familiar yet deceptively atypical type of job-sharing is what we usually refer to as part-time or temporary work. These jobs are often marginal in the sense that the part-time worker is the last hired and the first fired. The appeal to the employer lies in the ability to adjust the size of the work force to the immediate demand. Job-sharing in general, however, is equally appropriate to central occupations, professions, and jobs involving long term contractual or traditional commitments. The benefits that accrue to an employer by using job-sharing in these job areas are not so familiarly obvious, but once perceived they are indeed significant.

There is a general learning cycle that most people go through with a job. At first there is much to learn, and one's performance and productivity are low. This training phase may last from a few minutes to many weeks or more depending on the job. Next comes integration and mastery, a phase when energy input is high, productivity is high, and best of all, creativity is high. But this rarely lasts long enough, being all too soon followed by a plateau phase. Having mastered the job, the employee now turns his/her attention to getting a better deal from the system: less energy input, more side benefits, etc. Quantitative productivity may not be greatly affected, but quality and especially creativity are hurt badly.

By properly choosing the length of the job-sharing cycle, an employer could get more benefit from the

mastery phase while cutting short the plateau phase. For example, suppose you are running a retail store with a number of departments, and you need people to take responsibility for individual departments. You notice that the basic break-in period is about 2 weeks, but then after about 6 months the innovations have largely stopped, and your department person is spending more time socializing with other employees. Suppose you now introduce job-sharing so that two people are now alternately responsible for that department for 6 month periods. The distance provided by the 6 month break will require some re-break-in when that person returns, but this should be considerably shortened, and will be far outweighed by the fresh creative perspective. Can the plateau phase be eliminated? Probably not, but at least its preponderance can be significantly reduced.

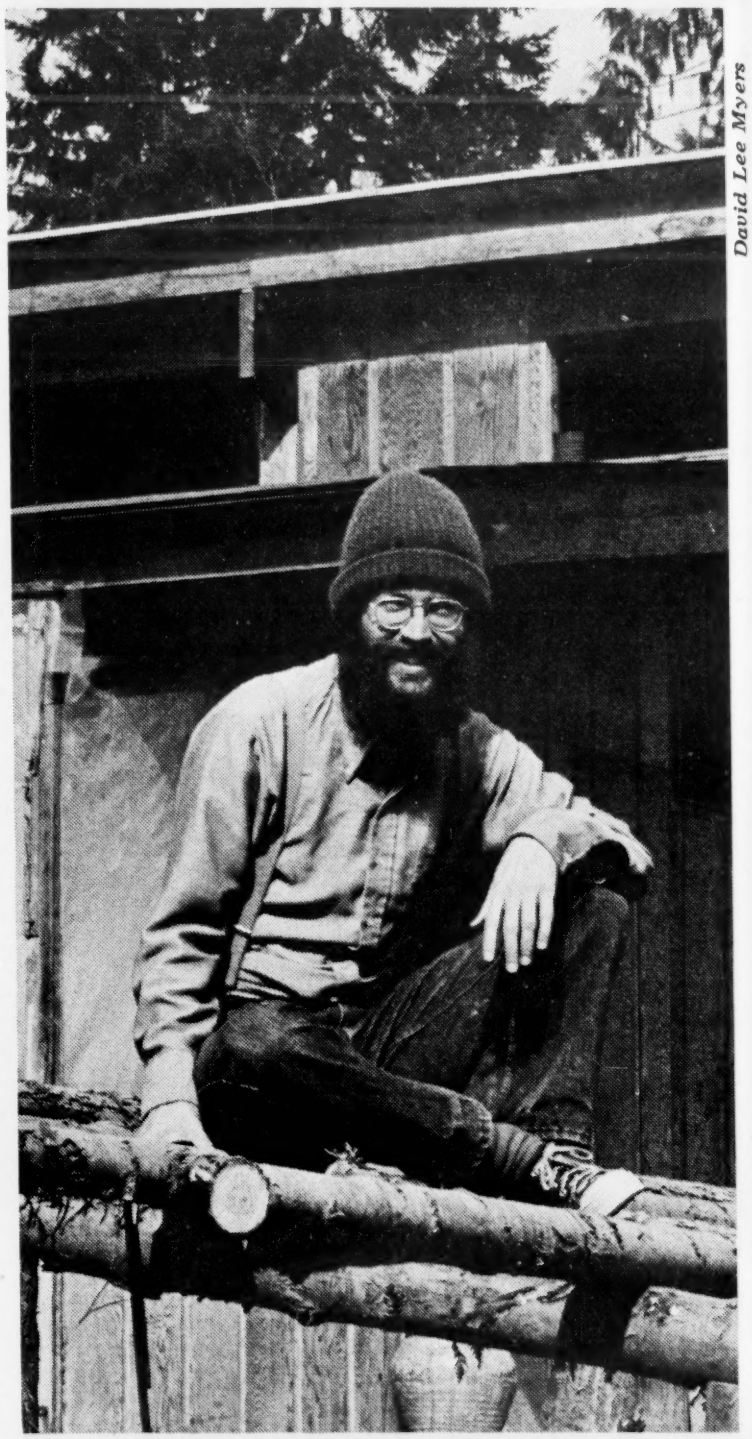
The second great benefit for the employer comes from the quality of the employees involved in job sharing. Diversity of experience has always been recognized as a promoter of wisdom of both the profound and common sense varieties. The life style of those who job-share can be expected to soften the rigidity and narrowness that often afflicts full time specialists. With increased experience and wisdom would also come increased moral authority. Wouldn't it change your image of a teacher or a government official if you knew they spent half their time "in the world" as generalists?

The list of benefits will likely grow as job-sharing is more broadly used, but we should at least include here a third one. Many jobs have both a routine side and an innovative side. While it is fairly easy to keep track of the time spent on the routine work, inspiration has little respect for the clock. Thus an employer who, for example, has two people in a shared job has the benefit on the innovative side of two for the price of one. Better quality and more quality, this is what intelligently structured job-sharing offers the employer.

HOW WOULD IT BENEFIT THE GENERAL SOCIETY?

We should say that the "it" we are talking about here is a greater use of job-sharing, not necessarily a total switch away from full-time jobs. At its best the choice to job-share is an individual, situation-dependent choice. It co-exists with full-time job situations and requires no legislation, etc., in that particular situation. In more detail then, our question is, "How would society benefit from a greater use of job-sharing now and from a greater familiarity and acceptance of it so that its relative use could be adjusted to help keep the society in balance with its needs?"

We in the developed countries are caught in a bind. The rising productivity of industry, the finite and fragile resources of the planet, and the general unsatisfactoriness of being unemployed confront us with their seemingly irreconcilable demands. If we allow productivity to rise (thereby needing fewer full time jobs to maintain the same level of output) and also try to maintain high employment, then we must consume more and more rapidly. The scenario of where that leads on a finite planet is all too familiar.



David Lee Myers

The author as home owner/builder – half-time – completing his woodshed.

Perhaps we could reduce productivity. As a general approach this is probably both unworkable and repugnant. Making industry more ecologically responsible might lower immediate productivity in some processes, but any program of ecological responsibility that was at all meaningful would have to include a switch to the production of long life, easily repaired goods. The net effect would be a great increase in effective productivity. As for lowering productivity for the sake of make-work, it is hard to see how this could be done except in a totalitarian society and without a massive suppression of both initiative and morale.

Schumacher speaks glowingly of lowering the general productivity by a factor of 6 so that more time "would be used for actually producing things, employing hands and brains and, naturally, excellent tools. An incredible thought!"[3] Incredibly chilling if you start thinking seriously of how it would be implemented. Not that in some situations more time spent combining hands, brains and excellent tools is chilling; it can

be delightful if it is freely chosen. Yet decreasing the productivity of industry seems neither realistic or appealing. Ask the coal miners how they would like to go back to "excellent" picks and shovels.

The much more appealing way to accomplish this combination is through increased productive time in the household economy and a natural growth of local, intermediate technology industries that may be slightly less efficient at the workplace but are overall competitive because of lower distribution costs, etc. Both of these tend again to a net increase in the society's productivity. Only totalitarian suppression or ecological disaster would be likely to decrease it.

We have two more alternatives to consider before returning to job-sharing. Suppose overall production (but not productivity) is stabilized or reduced for the sake of the health of the planet and unemployment is allowed to grow. Whether the unemployed then face extreme poverty or a comfortable welfare plan, a massive division within the society would have been created. It is hard to imagine how this division could be compatible with either social justice or social harmony.

Why not move those released from productive industries into service jobs? Increasingly, service jobs represent a shift out of the household economy of activities that are more efficiently and effectively kept within the household. People are waking up to this, and the service market can't be expected to expand indefinitely.

The only alternative that allows productivity to rise (keeping learning alive), production to stabilize or decrease (for the sake of us all), and the responsibilities and rewards of production to be spread broadly throughout the society – is job-sharing. If there is less marketplace work to be done, let each person on the average spend less time working in the marketplace, but do not deprive him/her of the market, or the market of him/her. When productivity is high and people value time over goods, the number of people choosing job-sharing will increase bringing production down into line with the society's demand. If more goods are needed, more people will choose to work full-time, raising production to meet demand. Job-sharing is the needed middle path between everyone working full time and unemployment. What at first glance might have seemed a facile solution could be profound.

In addition to providing this genuine solution to the productivity-resources-unemployment bind, job-sharing will also affect the society by changing patterns of productive activity and consumption. Those who choose to job-share will be reducing their time spent in the marketplace so that they can devote more time to three other areas: *personal* (personal growth, education, creative expression, etc.), *household* (gardening, homebuilding, child care, etc.), and *community* (volunteer social services, performing arts, simple human contact, politics, etc.). Most of these activities are profoundly productive in the sense that they improve the quality of life for those who do them and the society as a whole, yet the marketplace has difficulty giving most of them their proper due. Most past attempts to correct the imbalance introduced by our heavy focus on the market economy have been too inflexible (e.g., a woman's place is in the home, a man's is on the job), and ineffective (e.g., grants for artists, but only after they have become established). Job-sharing frees up those who are moved from *within* to spend more time in these non-market areas. A greater use of job-sharing would thus allow more productive and inner directed time to be spent in socially beneficial activities that are hard to measure with the usual marketplace yardstick.

As for consumption, it will be reduced in quantity and changed in quality. We spend the first part of our income differently from the latter part. Job-sharers, with their smaller cash flow and generally more efficient and productive households, will devote a larger part of their expenditures to basic goods and tools. Once the basic capital equipment for living has been assembled, the job-sharer may as often choose more personal time as choose to build up more cash to spend on less central items.

The people of the developed countries, especially the United States, are watched and often imitated by people all over the globe. Combining job-sharing and a productive and efficient household economy opens up the possibility of a comfortable life-style that, unlike the present middle-class life-style, could be adopted world-wide (as long as population growth continues to slow) without overstraining the planet. As such, job-sharing should have a genuinely healing international impact.

The list of social benefits could be extended, but I think the central point has been made. Our worship of the full time specialist is an increasingly maladaptive hold-over from a time when knowledge was hard to come by, the population was largely undereducated, and goods, not time, were the limiting factor in personal expression and development. The needed change (greater and more central use of job-sharing) is structurally relatively simple and its benefits are great. Once this is perceived, it raises the question . . .

WHY AREN'T WE DOING IT?

Overwhelmingly the answer must be that most people are not aware of job-sharing as an option, or of its benefits and implications. There are no groups promoting (or opposing) it as a major social option, the media devote no attention to it, so most people have never considered it. However practical an option it may have been, even in the past, it ran counter to the mythology of an expanding industrial economy with its fixation on cash as the one great solver of problems ("If we just had enough money, then we could do the things we want to do.").

For job-sharing to become a realistic option, there must be a significant pool of people who sense the limitations of cash, who know that time isn't money, and especially that money isn't convertible into time, and thus who would like to job-share. Until such a pool exists, there is little point to employers or the general society considering job-sharing. In terms of

Burns' analysis, we would expect such a pool to emerge as the industrial part of the economy begins to mature and stabilize and the household economy begins to reassert its importance. Since we have no previous historical experience with such a phase in the development of an industrial society, it should not surprise us if the reasonable options for dealing with its challenges are not all familiar.

Will there be those who oppose job-sharing? Undoubtedly some, but we need to remember that job-sharing does not require a broad social consensus before it can be used by those who want it. Those who oppose it need not participate. What about hesitant employers? This may be a more complex problem, but again it only takes an innovative few to make good use of it, tap into its real benefits, and then others will consider it more seriously.

WHAT WE NEED TO DO.

For our society at the present time, job-sharing is one of those delightful options where narrow personal interest and the long term global interest coincide. Once it has gained sufficient visibility and momentum, it will spread naturally and organically to match the needs of those who can appreciate its benefits. But we are not there yet, and if we are to ever get there that initial threshold of viability must be reached. The problem is one of awareness, communications, and sheer doing. The concept needs to be discussed, developed, and made familiar. Those currently involved in job-sharing situations can help by making their experiences more generally known. Facilitating information – for both employers and employees – needs to be made more readily available. Above all people need to simply get out and do it. When it gains a life of its own, it will be because many different people took the initiative to come to grips with the problems and possibilities of their own particular job area and persisted until they had developed their own viable job-sharing. ■

NOTES & REFERENCES

1. It is my impression that SRI (see summer 1977 *CQ*), is right about the numbers but wrong about the label "Voluntary Simplicity." A less catchy but more accurate description would be "voluntary de-emphasis of the cash economy," which often leads to a life-style that is more complex, as well as more rewarding, than the one-dimensional existence of the full-time marketplace specialist. In any case, whether the 5 million are seeking simplicity or the freedom to structure their own complexity is irrelevant to the question of job-sharing. What is important is that they sense the limitations of cash and place a high value on their personal time. That such a group exists and is growing seems indisputable.
2. Scott Burns, *The Household Economy*, 1975, Beacon Press, Boston.
3. E.F. Schumacher, *Small is Beautiful*, 1973, Harper & Row, New York.

> I like to have more than one boss. To have to please a single one is too narrow. I don't save myself from trouble, but it does have a lot of sideways-opening effects.
>
> – *Gregory Bateson*

I was

A piece of him, anyway

BY J. BALDWIN

MY COLLEGE DISHWASHING job ended in a heartfelt exchange of Fuck You's one sultry evening during rush hour. I had never much liked Howard Johnson's anyway, and reading Orwell's **Down and Out In Paris and London** hadn't helped a bit. Ninety cents an hour! Who were they kidding? True, you got to eat the untouched food that customers had left on their plates (you wouldn't believe the volume of uneaten food) but now the boss wanted me to take my Saturday morning to make a doghouse for his Great Dane, and for $ .90 an hour yet! To hell with it!

On the other hand, I'd have to find another job soon or I'd be back before my Dad, contritely accepting his "I told you so," and his "conditions" with his check. What middle class nineteen year old hasn't

Elton Robinson

J. Baldwin, **CQ***'s Soft Tech and Nomadics editor, in 1954 when he was Armand Hammer by night.*

Armand Hammer

had the problem of parents insisting that as long as they pay the bills, they have the say-so over your life? Damn! And it was a recession year too. I grumped down a malt at Red's Rite Spot and was in the process of completely bumming out a table of friends when a grad student type motioned me outside. "I have a job for you," he said innocently. "Six bucks a day for two hours work, but you have to keep your mouth shut." Wow. Thirty a week would not only pay my expenses, it would buy gas too. (Regular was $ .20 a gallon then.) In fact, if I was careful, I'd be able to spend the summer on the road instead of as a slave. So I said, "What do I have to do?"

The play was this. There had recently been a scandal at a famous Ivy League school where a group of jokers had put an imaginary man through college by paying his fees and taking his exams for him. He had received a degree with honors and a scholarship as well. The man I was talking to was a part of a similar scheme, only in this case the imaginary person was a factory worker. At the time he was three men sharing his shift. The three wanted a fourth so as to have more time for homework and also to avoid awkward face changes at times other than coffee breaks. I had to buy in to show commitment. A hundred bucks. I'd get it back when I didn't need the job any more and had recruited a replacement.

The fabled worker was named Armand Hammer, a reference to the baking soda box symbol which to some had delicious Communist overtones in those days of McCarthy investigations. Armand worked the evening shift, and my part would be the 8 to 10 p.m. quarter. I reported early so as to be introduced all around to the people who made it possible for Armand to work unmolested.

The shop steward, line foreman, parking lot guard, and several others who knew too much were paid off at Christmas with bottles of Cutty Sark (that most acceptable of bribes). Fellow workers were told that the ever-changing Armands were extras hired to fill in for absentees or men taken ill on the job. There was some suspicion of funny business, but as long as the shop steward was satisfied, nothing was said. He should have been satisfied! Armand was never late, absent, or troublesome, and he always voted correctly in Union elections.

When I became a quarter of Armand, he was installing driveshafts in luxury sedans. It was a job that required you to be quick so as not to slow the line down and get fired. There were four bolts that had to be started by hand and then driven home with a shrieking air pistol wrench. You had to be careful not to cross-thread the bolts. It was all too easy to get severely pinched or worse between the transmission and the heavy drive shaft that dropped on a cable from the ceiling every fifteen seconds. It was just dangerous enough to require all your attention, and the idea of having to do that for eight hours a day for weeks, months, and years appalled me and still does. Two hours was about right.

Armand had been working for about three years when I joined him. He was accumulating seniority and immunity to lay-off. In fact, the front office was considering him for promotion as a result of his good record. Armand, of course, refused, preferring to "stay with the boys on the line." Over the summer, Armand was usually one man, the one who needed the job most. At various times during the school year, he might be one, two, or four men, depending on school pressures. Three didn't fit the coffee breaks, and more than four was too awkward. Needless to say, Armand paid his tax on time. He told the company that he had his own retirement plan and insurance so as to avoid possible complications.

Last I heard from Armand was 1970. By then he had made nearly $150,000 for about 120 men. I've often wondered about the men involved, if they had any common trait other than being a part of Armand. I'll bet a party at which all the Armands showed up would be pretty interesting. And I've speculated on how many other Armands there might be in a nation as large as ours. There just *has* to be more of them, existing yet not existing, passing unseen among us, like ghosts. ■

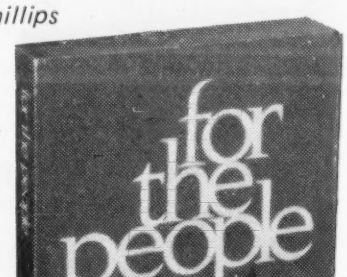
G. Russ Youngreen

Elton Robinson

For the People

An excellent how-to-do it book for consumer action ranging from surveys of drugstore pricing to evaluating nursing homes. Complete details and examples including how to run a news conference when you finally blow the whistle.

—Michael Phillips



For the People
(A Consumer Action Handbook)
Joanne Manning Anderson
1977; 379 pp.
$5.95 postpaid
from:
Addison-Wesley Pub. Co., Inc.
Jacob Way
Reading, MA 01867
or Whole Earth

One of the purposes of a doctor's directory is to provide consumers with basic information — information about education, availability, fees, and services — that will enable them to make a more informed choice when selecting a doctor. In addition, a doctors' directory can help demystify the medical profession in the minds of consumers by arousing consumer consciousness about questions to ask doctors. A directory provides a first step towards a more open relationship between doctor and patient, and the willingness or reluctance of doctors to cooperate may indicate their attitude towards such a relationship. The directory outlined in this project should not be viewed as an attempt to evaluate the medical competence of doctors.

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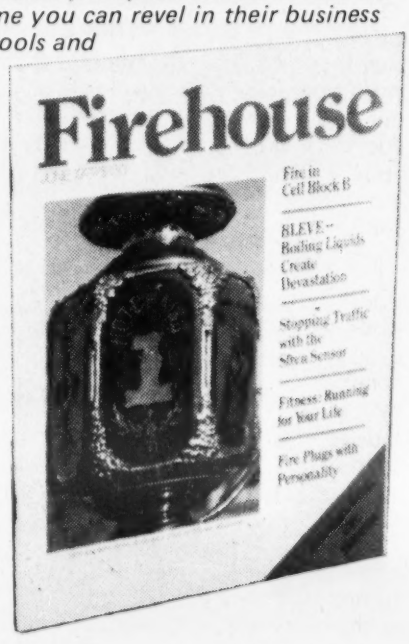
Legislators may be influenced by any of the following: a genuine interest in your issue, favorable publicity, the stand taken by committee chairpeople and other legislative or political party leaders, views of staff people, and loyalty to friends, lobbyists, and campaign contributors. But for most legislators, the desire for the support of the voting public proves the most important motivating factor. Reelection or election to a higher office is never far from their minds, and only public support can elect. Votes talk and legislators listen.

If you represent substantial numbers of strongly committed and politically active voters who make it clear to legislators that their vote on the bill will be remembered at election time, your influence can outweigh that of any other group or individual — campaign contributors notwithstanding.

Firehouse

I agree with Vonnegut — the only unquestionable heroes are firemen. With this magazine you can revel in their business — or learn of techniques, tools and gossip of use to your own volunteer group.

—SB



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Greenwich, CT 06830

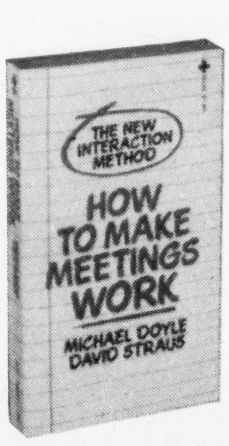
Cincinnati's park police, while trying to conserve energy, lit a fire in their office fireplace, causing $6,000 damage. They did not know the fireplace was a fake.

How to Make Meetings Work

It always amazes me how a group of otherwise pleasant people can go collectively insane as soon as they get in a meeting together. Anyone who suffers through the wrangling and frustration of poorly run meetings will find this book very useful. It analyzes common problems and suggests a straightforward, practical approach to improving the situation. I particularly like its emphasis on achieving consensus, a worthy goal that lots of people talk about without knowing much of how it can be achieved. It's good to finally find some concrete techniques for this process.

I worked for the authors of this book for awhile and had a chance to try their method with several groups. It works! In fact, in one case a group of high school English teachers who hated department meetings became so turned on by achieving consensus that their principal interpreted their new found energy and enthusiasm as subversive and threatened to transfer three of them if they didn't elect a chairman and give up consensus immediately.

—Linda Williams



How to Make Meetings Work
(The New Interaction Method)
Michael Doyle & David Straus
1976,1977; 300 pp.
$1.95 postpaid
from:
Playboy Press
c/o Simon & Schuster
Order Dept.
1230 Ave. of the Americas
New York, NY 10020
or Whole Earth

How it Works in Japan

If an important policy decision is to be made, groups are formed at all levels of the company to discuss the issues and move toward consensus for action. The process of employee involvement and discussion can take a good deal of time. Under the American management system, a few executives might make the decision faster, but then comes a lengthy period when the decision must be sold to countless people up and down the organization. Once a Japanese organization finally comes to a consensus, it can move very fast.

•

If you want to tighten up a definition, the lasso method works well. Write the definition on the wall and then circle or lasso key words, asking the group to be more specific. If the definition is "How to solve drug abuse in the schools," you could lasso "drug," "abuse," and "schools." What drugs, what do you mean by abuse, which schools, what age levels, and even what do you mean by solve: reduce, eliminate entirely, prevent, etc. Each time you clarify a key word, you sharpen the definition. If there is an "and" in the definition, check to make sure you are not trying to solve two problems at once.

The Neighborhood Works

Although only one issue has come out so far, The Neighborhood Works *looks like a good bet for those who want to tap into a nation-wide network of community-oriented alternative technology experimenters and activists.*

—John Holme

The Neighborhood Works
Scott Bernstein, Ed.
$20.00/yr (24 issues)
from:
The Center for Neighborhood Technology
3753 W. Ogden Ave.
Chicago, IL 60623

Working for Yourself

Are you ready to quit your job and be self-employed? This book will give plenty of encouragement. It is based on several hundred interviews with people who are successfully working for themselves. The author has a very clear writing style and is supportive of the readers' interests. Good advice and wonderful examples ranging from many in farming to several in crafts and a few unusual things like inventing and editing.

—Michael Phillips

Working for Yourself
(How to Be Successfully Self-Employed)
Geof Hewitt
1977; 304 pp.
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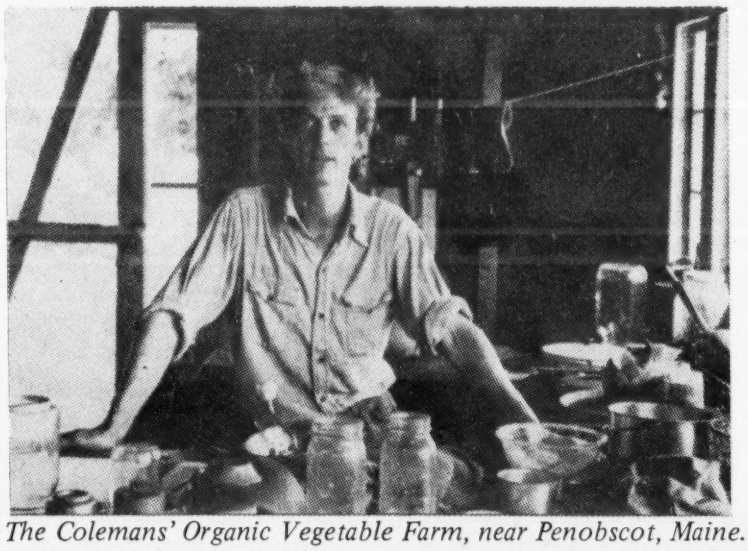


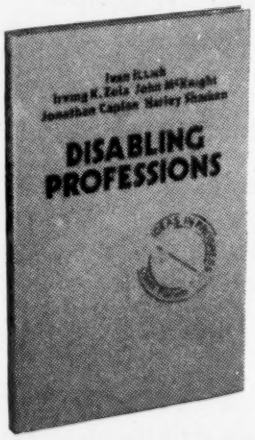
The Colemans' Organic Vegetable Farm, near Penobscot, Maine.

Surely one of the reasons for the Colemans' success in their quest for independence has been their thoroughness in doing every job right the first time, and keeping their efforts limited to their real capabilities. In starting with a plot of wooded land, the kind of land which — if ever cleared — is usually farmed for nothing more than blueberries, the Colemans wisely limited the size of their garden to only a quarter-acre. The garden, and the income it fetches, has grown with every season. Their first summer of selling vegetables, the Colemans earned only $350, living on savings from Eliot's years of teaching. Their economic yield, after seven years, was $4,200 from three-and-one-half acres, which for them is just fine. Outside expenses are limited to gasoline, grains, sweeteners, and, right now, a new root cellar, contracted to a concrete firm — the only contracted project on their homestead.

Disabling Professions

Five nasty men examine how society is serviced by its professionals.

—SB



Disabling Professions
Ivan Illich, Irving K. Zola, John McKnight, Jonathan Caplan, Harley Shaiken
1977; 127 pp.
$4.95 postpaid

from:
Marion Boyars Inc.
22 South Broadway
Salem, NH 03079
or
Burns & MacEachern Ltd.,
Suite 3, 62 Railside Road
Don Mills, Ontario M3A 1A6
or Whole Earth

Professions could not become dominant and disabling unless people were already experiencing as a lack that which the expert imputes to them as a need. When I learned to speak, *problems* existed only in mathematics or chess; *solutions* were saline or legal, and *need* was mainly used as a verb. The expressions, "I have a problem," or, "I have a need," both sounded silly. As I grew into my teens, and Hitler worked at solutions, the "social problem" also spread. "Problem" children of ever newer shades were discovered among the poor as social workers learned to brand their prey and to standardize their "needs." Need, used as a noun, became the fodder on which professions were fattened into dominance. Poverty was modernized. The poor became the "needy."

—Ivan Illich

•

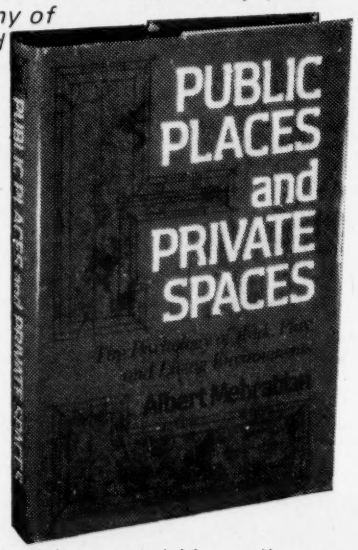
There should be a move towards boardroom justice — a justice which is committee-like and which operates informally. Litigants in person should be encouraged and received tolerantly. Legal rights and how to assess them should be taught — at least in outline — in our schools so that initiation no longer comes solely through experience. Compendiums for easy reference on various branches of the law should be compiled and kept up to date with the use of supplements: a library service of those compendiums should be available at every court. Litigants could then generally present their own cases concentrating on the facts and the merits, and leaving, if necessary, any points of law to be spotted and decided by the tribunal.

—Jonathan Caplan

Public Places and Private Spaces

Ever since **Games People Play** *I've been suspicious of popular psychology books. Oh they read OK, but when I compare what the book claims with what I see around me, I don't get a very good match; certainly nothing useful. Thus biased, I started reading this critique of how spaces affect the people that use them. Ended up reading it cover to cover and learning a lot. You might not agree with all that he says, but you'll be forced to reexamine many of your ideas about architecture and "planning" (and maybe people). I recommend the work highly.*

—J. Baldwin



Public Places and Private Spaces
(The Psychology of Work, Play and Living Environments)
Albert Mehrabian
1976; 354 pp.
$15.95 postpaid

from:
Basic Books Inc.
10 East 53rd St.
New York, NY 10022
or Whole Earth

Owners of high-rise, full-security buildings would be well advised to forget about their closed-circuit TV monitors and electronic garage gates; instead, they should rip out the middle two or three floors (or top floors) and install a swimming pool, a gymnasium, comfortable lounges, game rooms, a handball court, and even a full-service bar. Then their tenants would have some real security, deriving from a crisscross of social relationships and persons sharing a sense of psychological well-being.

•

Some small town school and public libraries have completely done away with the whole business of library cards, checkout procedures, and fines; instead, people are given unrestricted access to the circulating collection. They walk out with as many books as they want and bring them back when they feel like it. To the great surprise of those librarians who've tried this experiment, the number of books taken out goes up and the rate of nonreturns (and also of damage) goes down significantly, sometimes by as much as 10 percent. The lesson in all this seems to be that if we increase people's sense of independence and control (dominance) in a small community, we will also increase their sense of responsibility to the community.

Flo and the Sharks

BY RICHARD BALDASTY

WHEN THE SHARKS CAME GRINNING for Flo, she should have said "No!" But she trusted fish. Her experience was with neon tetras and flounder fillet. She was not mindful of the hostility factor. That tendency to shear off legs, that inclination to rip into thighs, that gleaming predilection for chunks of hand, shoulder, breast, and tender rump. Flo was intimately connected to such parts, and, had she been asked, she might have expressed a fondness for them. So she should have said "No!" She certainly ought not to have said, "Hello, fellas." Her salutation, though meant most innocently, seemed to excite the very waters. It surely underscored the vaguely sexual character of the scene.

The picture was not pretty. In fact we disliked it. A beautiful, a supple, young woman, alone in the ocean, immobilized by the kapok bulk of what is called a life preserver, was being approached by four roving, knowing, grinning-for-her sharks. We did not like this unpretty picture one bit. We were so ill-disposed toward it that we were strongly tempted to yell, "Watch out, Flo!" Better yet, we wish we might have counseled Flo to have remained aboard and not to have jumped into the ocean at all.

We wish Flo had stayed aboard the boat although we do understand that she had two reasons for leaving it. Those reasons, in the order in which they occurred to her, were:

1) The boat was sinking, and she did not desire to go down with it, and she did not feel obliged to do so because Erlen, not she, was the captain.

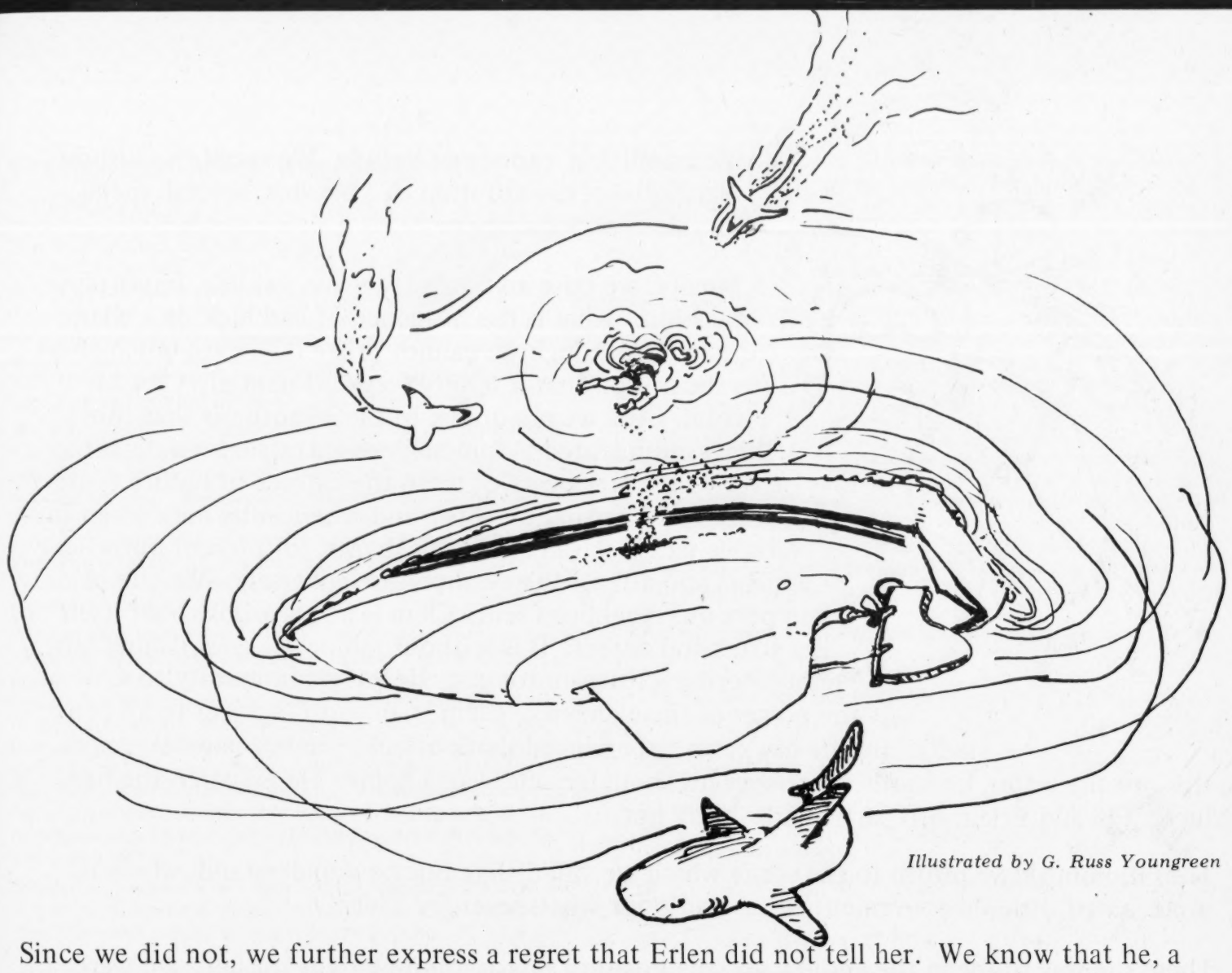
We respect this, Flo's first reason, as, in principle, valid. We ourselves would not like to go down with the boat unless our position required it. However, since the boat had been sinking for days, we think it might have lasted several hours more, and, because of the hostility factor, we feel Flo would have been wise to have remained aboard. That would have been our counsel.

2) She wished to demonstrate to Erlen, her husband, the captain, the superior efficacy of her life preserver. When the boat began to sink, Flo's and Erlen's thoughts had turned to their life preservers. They had argued genially about the relative merits of their respective devices, Flo's orange kapok vs. Erlen's yellow inflatable rubber, but the debate became aridly, perversely, theoretical. Flo, committed to an empiricist mode of verification, therefore jumped into the ocean.

Where she met four toothy sharks. Which is why we cannot regard this reason as good even though we might favor the methodological assumption behind it. We are of the received position that precautions against hostility take precedence over arcane demonstration points. We do wish we had so informed Flo.

I was reading **Epoch**, *a small, good literary magazine ($4/ 3 issues, 245 Goldwin Smith Hall, Cornell University, Ithaca, NY 14850), and loved a short story about an Iowa town that found happiness by decorating their community Christmas tree with garbage and watching it rot. I asked the author for more and here's what he sent. Richard Baldasty, with an M.A. in modern European history, teaches history and philosophy at Spokane Falls Community College in Washington. He has written other short strangenesses collected in* **The Psychiatric Exam**, *($2.25, Seattle Book Company, Box 9254, Seattle, Washington 98109).*

– Anne Herbert



Illustrated by G. Russ Youngreen

Since we did not, we further express a regret that Erlen did not tell her. We know that he, a man of sea experience beyond the aquariums, was not unaware of that tendency to shear off legs, and he probably sensed the sexual danger awaiting a beauty alone in the water. To some degree we think he let his wife down. The degree to which we think this is, however, overpowered and cancelled by the greater degree to which we are cognizant that Erlen had become seasick, that he was literally sick beyond words. We mention politely that he had been bailing for three days and barfing for two. We say decorously that he could no longer distinguish between the acts.

Next we backtrack and assay all that which contributed to the creation of this situation which we have introduced and eyed so unhappily.

We note a decision, a decision made by Flo and Erlen, to sail the boat *SeaSport* from Hawaii to San Francisco. We call this an unwise decision and reflect upon the role of such decisions in human misery. We suspect it looms large, and we so note in our notebook. We also mull over the frequency of unwise decisions and conclude that this frequency is due to the ease of making an unwise decision, an ease which is itself eased by lack of complete information.

Under the heading "lack of complete information," we observe, as Flo and Erlen did not until they were far at sea, a hole in the *SeaSport*. We label this melancholy discovery a structural defect. We consider it a major situational aspect and a significant contributor to the occurrence of others.

We hold the water which poured through the structural defect responsible for flooding the *SeaSport*'s radio. We term this disaster an electrical short. We note that it prevented Erlen from radioing any conceivable help that they needed help. We think this was a particularly bad break for them, a sorry fact which shrouded days of bailing and sinking with despair of rescue.

We record the motor failure and its consequence: a case of drift.

We watch the ancient action of wind and tide pull the drifting *SeaSport* ever farther out to sea, farther from chance of discovery. This we list in our notebook as violently demoralizing. We believe it may figure in the intense nausea of Erlen's illness. We call it the violently

demoralizing caprice of nature. We recall the Lisbon earthquake, the eruption of Vesuvius, several memorable typhoons.

Finally, we raise an evasive, elusive, eel-like, important question. What is the influence of bad luck on a shark attack? Although we cannot prove it, we are much given to the notion that it is very, very influential. Crucial. Pivotal. And we are drawn to the hypothesis that those things enumerated – unwise decision, structural defect, electrical short, a case of drift, the caprice of nature – are constants in a situation (life), and woe results only when the variable bad luck (an attack by sharks, for present purposes) appears and affects the *total* picture adversely. We cite in support our neighbor Clem. Clem is a fool whose boat itself is a structural defect. It is without radio. He goes fishing not remembering to buy motor gas. He has no immunity to drift or the power of the elements. Clem is, in short, subject to all constants. But he has never experienced shark attack. He but paddles ashore, tips out the water, hoists the boat over his shoulder, and walks home. He is spared the bad luck. Flo and Erlen, Flo particularly, were not.

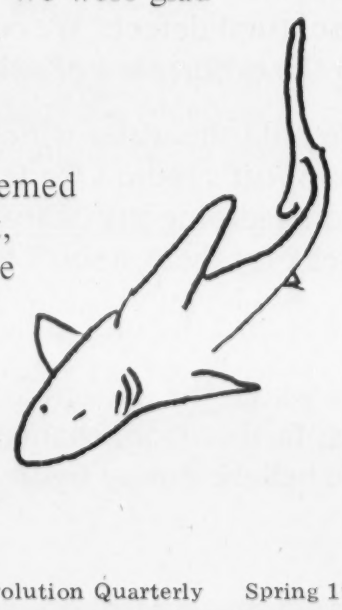
Thus illumined, we return to the scene which we still dislike but now understand, which is some, albeit little, improvement for us and none whatsoever for Flo.

There she was, alone in the endless sea, the hostility factor grinning right for her. We were terrified, stricken with trembling at her plight. At least she could have said, "No, not now, thank you anyway, I'm busy, see you fish later." But she greeted them, "Hello, fellas." Her words savaged our ears and brought us near to fainting. How pathetically they revealed her naive vulnerability before a menace which we saw as almost sexual and decidedly predatory. She was being led, o lord, to such a fate as even now we cannot contemplate.

And so – we wildly, ecstatically, jubilantly, uncontrollably, crazily, greeted the instantaneous arrival of THE COAST GUARD CUTTER as precisely the sort of positive item for which we had hoped against hope even though we could not suppress our queasiness about its *deus ex machina* properties, an aesthetic jar which, while not so repellent to us as what would have happened otherwise, yet disturbed our sensibilities. We cheered. We cheered the diversionary mackerel toss. We cheered the shots. We cheered the incarnadined sea. We yelled bravo for the heroic guardsman who swam with life tow to our dear Flo. We liked it. We loved it all. It prettied up the scene. We wondered if it prettied it too well.

Back in Hawaii we continued to wonder. We went to the hospital to visit Flo who was being treated for extreme exhaustion. We asked the nurse if we might go in. Yes, she said, we could. Flo was going to be all right, but she was weak. We tip-toed in. We were glad to see her sleeping peacefully. We were happy to see the many flowers. Were they too pretty?

We began to analyze the role of what we may call the good luck in life. We had seen it operate, as it does, artificially. We were offended. It seemed to possess no rationale. But neither did bad luck. Perhaps, we thought, fortune just works that way, opposing force to force, and sometimes we can survive in between. And so we began to become accepting of its strange ways. After all, we love Flo, and we do not favor, even hypothetically, the hostility factor in sharks. We are not anti-fish, but we make the necessary deductions about some of them. It is not our fault we want to live. We'll take any assistance we can get. ■



Stranger than fiction true roach story

by Stephen Finn

Several years ago, while living in Fort Lauderdale, my wife and I had problems with the one and a half inch Florida variety of cockroach. Whenever one of us came in the door, their small brown bodies could be seen scurrying behind furniture and around corners.

The most common course of action was to arm myself with a can of bug spray and go small game hunting. One night I was using guerrilla tactics in a battle with a particularly ferocious spider. This involved leaping close to the wall he had stationed himself on, spraying him with the bug spray, and getting back out of the way before he could attack. The only effect of all this was to cover him with so much of the white spray that he looked like a hateful plaster museum model of a 4 inch arachnid.

After about the fifteenth attack, while our eyes were locked in mutual species hatred, I began to have the distinct impression of being watched from the closet about four feet away. The feeling was not one of malevolence, but of a sort of benign curiosity. I immediately turned to address the intruder into my private wars and came face to face with a very large male cockroach (substitute female if you feel that theirs is a matriarchal society). He was immobile except for a systematic, constant back and forth waggling of his antennae, and he was very definitely wondering what the hell I was doing.

Suddenly I began to feel very foolish, standing there on my bug-spray battlefield. I realized that these bugs didn't hate me, they were simply trying to make a living. So why was I trying so hard to eradicate them? I began to feel a need to explain my actions, and since I could feel a very distinct mental connection between myself and the cockroach, I began to try and explain things to him. This was somewhat difficult at first since I don't normally communicate telepathically with bugs. I told him that it wasn't so much that I, or other people, wished to kill him and his friends — it was just that they couldn't be running around the house all the time when we were there. It bothers people, for Chrissakes, to open the door and see cockroaches running all over the place. Not that there was anything inherently wrong with them, of course. (I was trying hard not to offend him.)

Sensing that my thoughts weren't carrying a whole lot of weight, I decided to offer a compromise. "Why don't we do it this way — whenever there are people around, which would be during the day and evening, you cockroaches stay out of sight. Then at night, when everybody's asleep, your group can have the whole house. Just stay off the beds and make sure everyone is asleep before you come out. I really don't enjoy killing you, but I have to. I'm under tremendous social and racial pressure to keep you from overrunning my house. So if you only come out at night there won't be any problem. I won't set out any poison or fumigators and you won't interfere with my life, agreed?"

I received no message in response. He simply turned around and walked away. Apparently the conversation was finished. But from that day on we never saw another cockroach in the house. They cleaned up all the crumbs and dirt but they always waited till late at night.

I told a few of my friends about this (very few) and was asked to come over and have a talk with their roaches. I found that the large ones were always pretty agreeable and I generally established contact with them. Once or twice they agreed to the terms and tried to live in harmony with mankind. The smaller type of cockroach was much less communicative. They ignored most of my attempts at mental contact and never made any effort to go along with the terms of the treaty. I now feel that they simply don't have the facilities for this type of contact; they are on a different wavelength, or they just didn't agree to the terms.

The spider was a different story altogether. As soon as I finished my conversation with the cockroach, the spider attacked, obviously thinking he could surprise me while I was still dazed. Fortunately my survival instincts were intact and unfettered. Catching his leap out of the corner of my eye, I jumped back two steps, and, feinting with the can of bug spray in my left hand, stepped on him as soon as he hit the floor. ■

Roach stomach 1

Dear Friends:

I almost apologize for sending yet another cockroach story, but it does cast light on Dorothy Horn's story (Fall '77 CQ).

I was sitting on the floor in the semi-darkness, talking on the telephone. As usual, when one sits quietly for any length of time in Forth Worth, Texas, a cockroach came out and ran by. I swatted the bug with my open hand, messily killing it. The phone conversation was almost over and rather than finish it early, I just held my hand apart and aloft for a few minutes. I happened to notice two spots of juice on the center of my palm, and after the phone call I immediately went to the sink and washed. The spots, a big one and a small one, were on my hand less than 4 minutes and they looked like this:

I thought nothing more about the incident until the next day . . . the outer layers of skin were missing from my palm in exactly the place and shape as the bug juice, eaten away with rough edges. (!) Stomach acid, probably dissolved my skin, which means that if they had wanted to, cockroaches could have eaten you, Dorothy Horn.

Paul Carlson
Fort Worth, Texas

Roach stomach 2

Boric Acid used properly not only "kills roaches" as a reader-writer last issue informed us, but is also an inexorable degenerative disease of roachdom. Here's what happened in my house:

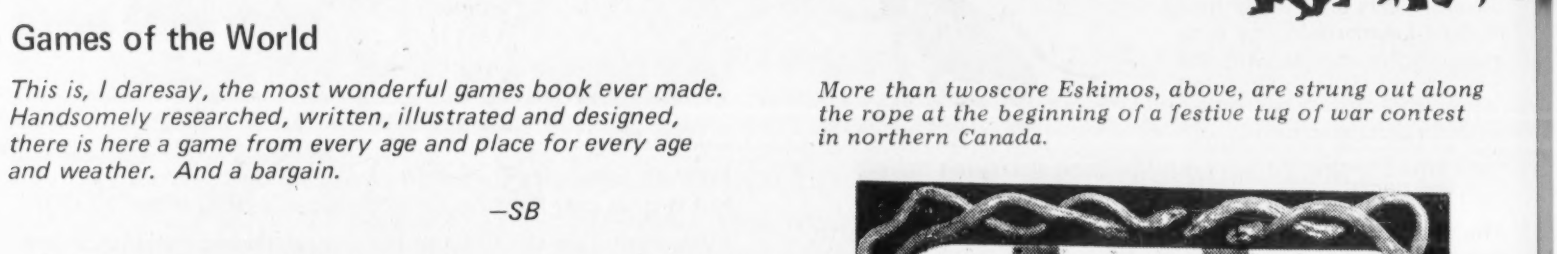
After cleaning the *whole* kitchen, under, around and through all cupboards & appliances etc, removing all dishes, and bagging all food in the fridge, we sprinkled boric acid powder in all known roach paths, hang-outs, and normally unspeakable refuges. Our objective: Make all possible sources of roach-nourishment inacessible, and replacing it with boric acid.

Now please understand; while roaches *do* eat the boric acid, they are not really "poisoned" as such. When the stuff arrives in their stomaches, it combines with a stomache chemical, and releases a gas which explodes their stomaches. However, since roaches care for their dead by eating them, it doesn't take long for the whole gang that terrorizes your house to be wiped out. As for those wary roaches who merely walk in the BA, they will track it back to the nest where hatching roaches will nibble on it. Our house, once infested beyond belief, has been roach free for over a year since this treatment. For 'insurance,' you can make a thin paste by mixing BA with water, and spreading an equally thin layer along traditional roach routes such as baseboards and the backs of refrigerators, where it will be virtually invisible, semi-permanent, and won't poison your pets, as concentrations of BA are not fit for man nor beast. Perhaps best of all, you don't have to use insecticides and thereby support those industries which are not interested in fostering ecologically sound living. (By the way, the whole process took about 2-3 weeks for our 14 room Victorian monster.)

Before we learned the basic boric acid treatment, one day I was watching roaches scooting in and out from behind a cupboard, "It was a normal day," and I noticed there was about a 1/4 inch space between the cupboard and the wall, so I shook a flurry of Ajax down there to see if I could disrupt their smug little operation. It didn't take long for hundreds of roaches to freak out and run around on the walls. It rained powder blue roaches from the ceiling for 3 days.

Happy Hunting,

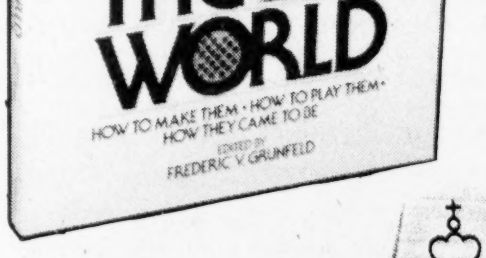
Fred Clarkson
Washington, D.C.



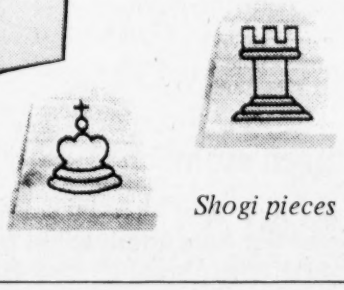
Games of the World

This is, I daresay, the most wonderful games book ever made. Handsomely researched, written, illustrated and designed, there is here a game from every age and place for every age and weather. And a bargain.

—SB

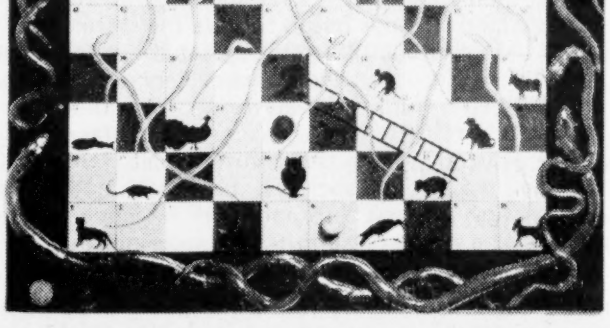


Games of the World
(How to Make Them,
How to Play Them,
How They Came to Be)
Frederic V. Grunfeld, Ed.
1975, 1977; 280 pp.
$7.95 postpaid
from:
Ballantine Books, Inc.
457 Hahn Rd.
Westminster, MD 21157
or Whole Earth



Shogi pieces

More than twoscore Eskimos, above, are strung out along the rope at the beginning of a festive tug of war contest in northern Canada.



A snakes and ladders board based on a classic Indian design, can be made in a few hours. Serpents of painted clay cóils may be added around the board, to make this game of good versus evil appear even more dramatic. Symbolically, a game of snakes and ladders is a moral journey through life to heaven. The path is shortened by virtue and good deeds, lengthened by evil and vice.

The Sixties

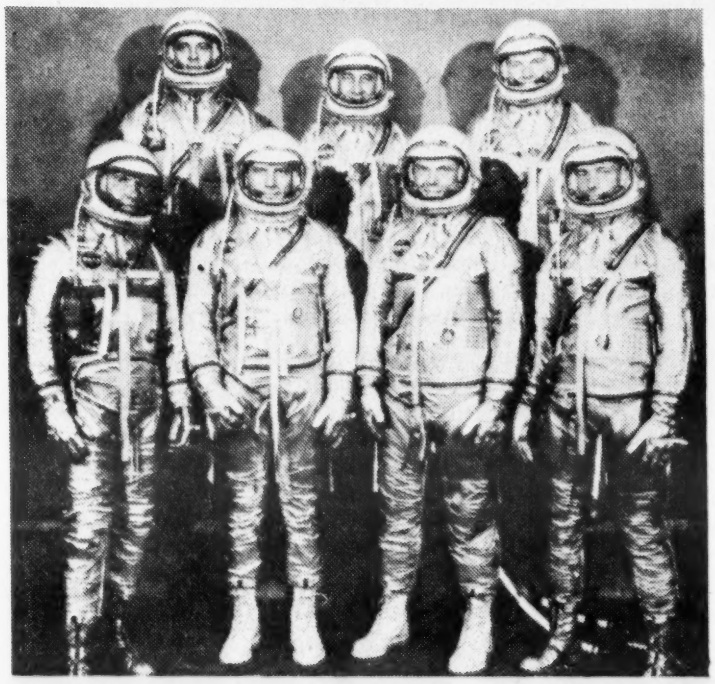
Good idea (pivotal events of the decade remembered by major players), good format (big text and enormous and tiny photos), good editing and good design make this the so-far definitive text on ten years that lasted, briefly, forever.

—SB

The Sixties
(The decade remembered now, by the people who lived it then)
Lynda Rosen Obst, Ed.
1977; 313 pp.
$9.95 postpaid
from:
Random House, Inc.
455 Hahn Rd.
Westminster, MD 21157
or Whole Earth

Dylan said, okay – paraphrase – "Except we ought to have it in San Francisco right on Nob Hill where I have my concert, and I'll get a whole bunch of trucks and picket signs – some of the signs will be bland and some of them have lemons painted on them and some of them are watermelon pictures, bananas, others will have the word Orange or Automobile or the words Venetian Blind, I'll pay for the trucks and I'll get it all together and I'll be there, and we'll have a little march for the peace demonstration. What they're doing is too obvious, it's a bad show, chickenshit poetry, they don't know what the kids want, who's their public?" . . .
I reported Dylan's ideas back to Jerry Rubin and the Vietnam Day Committee marchers, and they didn't act on it, they didn't realize what was being offered them on a silver platter.

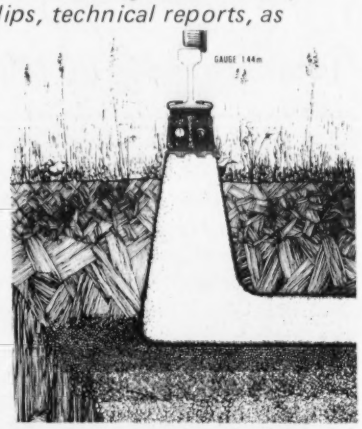
–Allen Ginsberg



YV88

Fine-grain Ecotopia. Yosemite fictioned by a tree and train fanatic into a nicer 1980s. Interesting documentary style — letters, journals, news clips, technical reports, as well as narrative.

—SB



YV88
(An Eco-Fiction of Tomorrow)
Christopher Swan & Chet Roaman
1977; 248 pp.
$7.95 postpaid
from:
Sierra Club Books
Box 7959
San Francisco, CA 94120
or Whole Earth

Wawona Village was the first community to give in. Then Crane Flat followed, as it frequently does. Even mighty El Portal is gradually capitulating. Giving them up is a painful thing to do.

But the realization has taken hold that one of the major barriers keeping wild animals at a distance was the presence, often the superabundance, of domestic pets.

However, there are advantages to this sacrifice. People in Wawona have begun to share with their wild neighbors. At least one household is regularly visited by a raccoon, another by a gray fox. A burrowing owl has located itself in a corner of a garden right off Wawona's main plaza. And pigmy owls regularly perch in favored houses. Coyotes have been discovered to be very friendly, though a little guarded. But the most popular wild pet species is the ring-tailed cat. There are at least five homes I know of that have been adopted by these relatively docile creatures. They are nocturnal and weren't very visible until the household dogs and cats left, but interestingly enough the gold miners used to keep them around to catch rats and mice.

Gay Sunshine

I bought my first copy of Gay Sunshine *in 1972 when some staffers from Berkeley hawked copies on the streets of Greenwich Village. It seemed a rare artifact in those days — defining and documenting a gay culture both ancient and contemporary, offering radical analyses that linked gay oppression to male/white/capitalist oppression, publishing long interviews with people like Ginsberg, Isherwood, Burroughs, Rorem. Above all,* GS *offered a proud and unashamed view of the sexual self, evangelizing for inter-male love in a way that not only legitimized but made beautiful the impulses I had felt all my life. It marked the beginning of the end of my self-inquisition.*

GS *has gone through changes since it started in 1970 — issue number 35 (Fall 1977) hit the stands recently — but editor Winston Leyland has remained constant. Emphasis has shifted from political exegesis to cultural probes. The result is more articles on homophilia around the world ("Arab Civilization and Male Love," "Russia's Gay Literature," "The Gay Mishima") and more erotic poetry. Of all the faggot quarterlies that have survived the financial shredder of the last few years, this is the best — scholarly, stylish, radical, redemptive. The writing and graphics are usually first-rate. Not only does* GS *symbolize the values shared by the gay community — it discovered and shaped many of those values.*

—Richard Hall

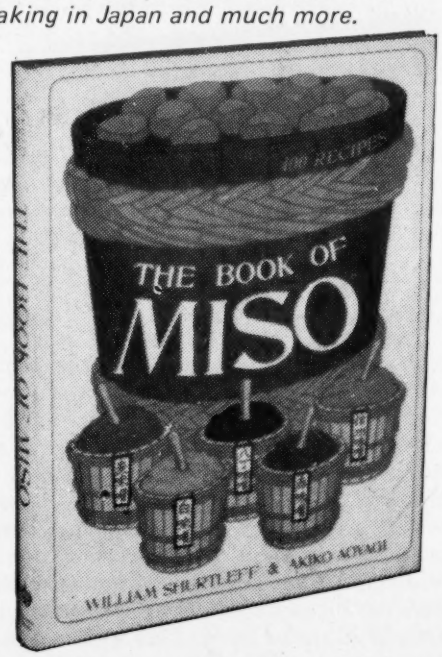
Gay Sunshine
Winston Leyland, Ed.
$10.00/10 issues (quarterly)
$18.00/first class
$1.50/single copy
from:
Gay Sunshine
P.O. Box 40397
San Francisco, CA 94140

Tennessee Williams: You know, in my experience I've discovered that some of the most politically reactionary people in America are gays. Oh, they *love* William Buckley, it's the masochism in them.

The Book of Miso

This is your book if you are interested in miso, a high-protein all-purpose paste of fermented soybeans. Sold as a cookbook because of its 400 recipes based on miso and Japanese-style cooking with a Western slant, its scope is more encyclopedic. Included is a lengthy description of miso — its chemistry, uses, history, and types — fifty pages of practical instruction in miso making, a guide to miso-related people, institutions and resources throughout the world, advice to those who want to pursue miso-making in Japan and much more.

—Deborah Madison



The Book of Miso
William Shurtleff & Akiko Aoyagi
1976; 255 pp.
$6.95 postpaid
from:
Autumn Press
Seven Littell Rd.
Brookline, MA 02146
or Whole Earth

The key to Miso's extraordinary nutritional value is the process of fermentation, a process which, throughout its long and varied history around the world, has served three fundamental purposes: the improvement of a food's digestibility; the transformation of its flavor and aroma, color and texture; and its preservation without refrigeration. Watching the drama enlarged a thousandfold and presented in time-lapse color photography, one witnesses a near-miraculous world in which tiny spores burst into blossom like elegant and complex flowers, enzymes reach out inquisitively like long fingers melting solid particles at their touch, and populations of mold explode until they have totally enveloped the foods — or "substrates" — which support their life. Just as Western craftsmen have fermented milk to form cheese and yogurt, or grapes to form wine, Eastern craftsmen have fermented soybeans and grains to form miso and shoyu.

More squat-to-pee

"No More Squat to Pee" in Winter '78 is hard to top. But Maya, and all New Age women, may wish to note the following quote that appeared recently in an article about a feminist record company:

> Recently a promo man summed up the record industry's attitude toward women for me: "As long as they sit to pee, they're okay." Women are peripheral to the industry in nearly every sense.

I *suppose* there's a metaphysical/physical issue in the politics of posture: submission vs. aggression, shame vs. pride. Bottom line here is that lovely New Age beings know what pleases them, and why, and gender has nothing to do with it!

I know gay men — very masculine ones at that — who squat to piss, because it feels softer and more earth-reverent.

But the greatest of all role-free-models — speak of women in music! — has to be Joni Mitchell, who appeared naked in *For the Roses*, and follows with a song from her new album:

> There was a moon and a street lamp
> I didn't know I drank such a lot
> 'Till I pissed a tequila-anaconda
> The full length of the parking lot!

Love,

Drake (plumbing, but little used!)
Western Mass.

READING FOR RUNNING *by Tom Ferguson*

It must be the most benign fad in history. Apparently superficial, as any craze, it nevertheless goes deep into the practitioner and possibly into the society as a whole. Harmful effects are hard to find. The accoutrements are too minimal to be a distraction. Competition is optional. Health and good spirits bloom. OK.

Tom Ferguson, editor of Medical Self Care *($7.00/yr, Box 717, Inverness, California 94937), went from reluctance to enthusiasm to obsession about running, as you can tell from his appraisals of the current best of the running literature.*

—SB

The Aerobics Way

Ken Cooper has had more positive impact on the lives of more Americans than any other living physician. Since the publication of his first book, Aerobics, *in 1968, 60 million Americans have started exercise programs, many of them using his book as a guide. During this time the death rate from heart disease has declined ten percent. Between 1970 and 1974, the average American's life span increased from 70.9 to 72.0 years. Since '68, Cooper has been continuing his exercise research at the Aerobics Center in Dallas. This new book includes his experiences in the intervening nine years. It is a much superior book.* Aerobics *was based on Cooper's work with young and middle-aged Air Force men.* The Aerobics Way *reflects his work with women, older people, and people with special medical problems, including obesity. There is a much more complete treatment of diet. More sports are included. There is a self-scoring coronary risk profile, and an excellent bibliography.*

The basic program has changed in two ways: endurance points *have been added (so that three miles run together are now worth more than three miles run separately), and there is more emphasis on starting out very slowly and gently. Cooper argues persuasively for a treadmill stress test — especially for men over thirty-five — before starting a new program, and at regular intervals afterward. Such testing was not widely available when the first book was published. Now — largely because of Cooper's efforts — they are becoming increasingly so.* The Aerobics Way *lists 151 centers, nationwide, which specialize in such testing. The most interesting new resource this book offers is corresponding membership in the new Aerobics International Research Society. People exercising regularly are encouraged to join. Members receive a blank exercise log which is filled out daily and periodically mailed in. Your exercise information is added to the AIRS data bank. You receive a monthly printout of your activity with aerobics points calculated, and copies of the Society's newsletter. You'll also be asked to fill out an occasional health questionnaire, so that the effects of your exercise program can be documented. There is a nominal yearly membership fee. "I hope you will join," Cooper writes, "since it will be motivational for you and will provide our research institute with an invaluable source of data." Membership information is available from AIRS, P.O. Box 22359, Dallas, Texas 75222.*

The best book currently available on getting in shape.

The Aerobics Way
(New Data on the World's Most Popular Exercise Program)
Kenneth H. Cooper, M.D., M.P.H.
1977; 311 pp.
$10.00 postpaid

from:
M. Evans & Co., Inc.
J.B. Lippincott Co.
East Washington Square
Philadelphia, PA 19105
or Whole Earth

Another important phenomenon of exercise is the seemingly contradictory fact that vigorous exercise actually depresses the appetite, thus making dieting easier.

Total Fitness in 30 Minutes a Week

This book's title put me off for a long time, but people kept recommending it and I finally read it and, lo and behold, it's a very useful book, though it could more accurately be entitled "Relative Fitness in 30 Minutes a Week." The point is that if you don't exercise at all, 30 minutes a week devoted to Dr. Moorehouse's program will probably bring you to above-normal fitness for your age and sex.

Reading this book made me aware of my own prejudices in the direction of high levels of fitness. It also made me realize that I have never been completely out of condition. Moorehouse has you start small *— standing instead of sitting, taking the stairs instead of riding the elevator, running in place for five minutes before your daily bath or shower. An excellent book if you are just starting to exercise, or if you have limited time to devote to an exercise program.*

Total Fitness in 30 Minutes a Week
Laurence E. Moorehouse, Ph.D., & Leonard Gross
1975; 255 pp.
$2.20 postpaid

from:
Pocket Books
1 West 39th St.
New York, NY 10018
or Whole Earth

To double your physical strength and endurance and bring you to par with a trained athlete requires a minimum of two hours a day of strenuous exertion. That's not a realistic goal; you haven't got the time, patience, inclination, or need. You'll do extremely well with less.

Beyond Jogging

Advanced running. Breathing techniques, running meditation, and altered states. Mike Spino studied with the great running coaches Percy Wells Cerutty and Mihaly Igloi, and passes on some of their secrets. An additional bonus is the fine afterward, "Sport as Yoga," by Michael Murphy, who has spent the last few years talking to high-performance athletes about the special powers, similar to the yoga siddhi, *that arise during the performance of one's sport.*

Beyond Jogging
Mike Spino
1976; 111 pp.
$3.95 postpaid

from:
Celestial Arts
231 Adrian Road
Millbrae, CA 94030
or Whole Earth

The Complete Book of Running

This chatty, highly readable runner's gazetteer covers an amazing number of the big and little details — practical, physiological, philosophical, from transcendence to jockstraps — that take on increasing importance as running becomes an integral part of your life.

The Complete Book of Running
James F. Fixx
1977; 315 pp.
$10.00 postpaid

from:
Random House, Inc.
455 Hahn Rd.
Westminster, MD 21157
or Whole Earth

The easiest time of day for running, the time least likely to be disrupted by unexpected intrusions, is early morning. All that's needed is to rise a bit earlier than usual. Even in winter there's a special joy in being outdoors at dawn, a peaceful sense of privacy found at no other time. In summer there's the advantage of getting your run in before the heat of the day.

The Joy of Running

Dr. Kostrubala has you start big — running/walking for three one-hour periods a week. You end up joining a running group — or forming your own — and running 10 miles a day in training for a marathon. The author started out 50 pounds overweight, unable to run 100 yards. The story of his progress — interspersed with physiological and anthropological asides — is delightful and inspiring. His account of his first marathon will make you feel as though you had run one yourself.

I started marathon training after reading this book. (I'd worked my way through the Aerobics *program already.) I'm now up to 15 miles. Training for a marathon takes a long time — often a year or longer.*

It becomes a sort of benign addiction. There's certainly a point where it becomes something more than just keeping in shape. In my case it was some things I started noticing at and beyond the three-mile mark. A kind of physical and emotional second wind. Near the point of exhaustion, I'd suddenly find myself sprinting, transported. Or, other times, suddenly crying for no apparent reason. Something happens when you start running long distances. I don't understand what it is, but I'm out there every day because of it. This personal, quirky book comes as close to describing it as anything I've seen.

The Joy of Running
Thaddeus Kostrubala, M.D.
1976, 1977; 176 pp.
$1.75 postpaid

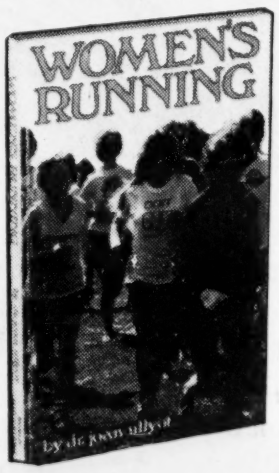
from:
Pocket Books
1 West 39th St.
New York, NY 10018
or Whole Earth

The slow, long-distance runner experiences a part of his unconscious. It is an altered state of consciousness. . . . There is often a complete relief of tension and anxiety. The runner is washed out from within.

Women's Running

For beginning and advanced women runners. Good sections on sox, bras, cold & wet weather clothing. Evaluates shoes by brand name and gives names of companies which sell extra-narrow running shoes (a problem for many women, since most companies make only small versions of wider men's shoes). The author, a physician who runs, communicates the feeling of camaraderie of running with women and offers practical tips on running with men.

—Gatha Hesselden



Women's Running
Joan Ullyot, M.D.
1976; 155 pp.
$3.95 postpaid

from:
World Publications
Box 366
Mountain View, CA 94040
or Whole Earth

One of the sad facts of life is that even a paunchy, beer-drinking, smoking, middle-aged slob, if he's male, can almost always run a mile faster and more easily without practice than a woman. It's discouraging to you and can lead to understandable feelings of resentment if you set out together. It's unjust, but there it is — your horribly unfit husband is a better miler than you at the start. . . . He may wish to run with you and guide your steps. Say no. Pleasant as it may be to have company, it is unwise to run with a man until you are reasonably fit and can run under 10 minutes per mile. ■

Where There Is No Doctor

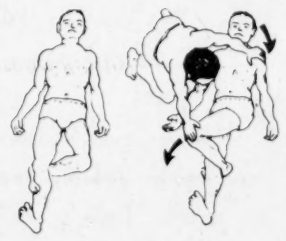
A pioneering self-care handbook based on practices developed by the author and co-workers over the past sixteen years — while organizing a self-care health network in a remote, doctorless area of rural Mexico. Every page is crammed with useful basic information, some of it specific to the problems of underdeveloped countries, most of use to anyone. Includes a fine chapter on being a lay health worker. Spanish edition also available.

—Tom Ferguson

Where There Is No Doctor
(A Village Health Care Handbook)
David Werner
1977; 447 pp.
$5.00 postpaid

from:
The Hesperian Foundation
P.O. Box 1692
Palo Alto, CA 94302
or Whole Earth

• For low back pain that comes from lifting or straining, quick relief can sometimes be brought like this:



Have the person lie with one foot tucked under his knee.

Then, holding this shoulder down,

forcefully push this knee over so as to twist the back.

Do this first on one side and then the other.

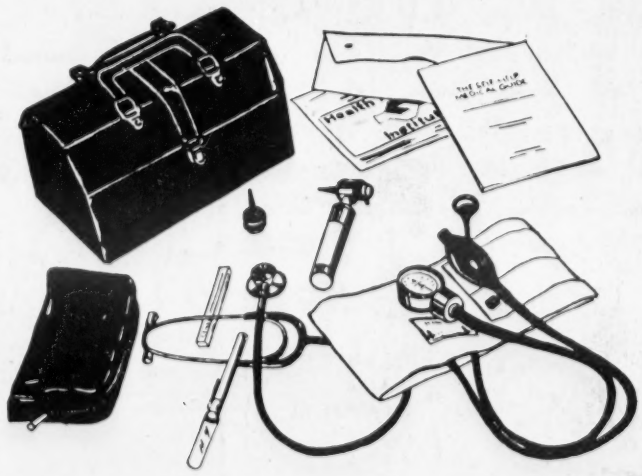
Family Black Bag

Someone has finally put together a serviceable and sensibly-priced black bag of professional-quality doctor's tools. This kit contains stethoscope, blood pressure cuff, otoscope (for looking into ears), high intensity penlight, oral and rectal thermometers, tongue depressor, dental mirror, a self-help medical guide by self-care pioneer Keith Sehnert, M.D., and a sturdy vinyl bag to carry everything in. Family health record forms and instructions for using tools are included. Women may want to add a plastic speculum. ($1 or less at many drugstores or $2.00 postpaid from New Moon Communications, Box 3488, Ridgeway Station, Stamford, CT 06905.)

—Tom Ferguson

Family Black Bag
$69.00 postpaid

from:
Health Activation Network
P.O. Box 923
Arlington, VA 22180



INTRODUCING

THE MOLE-EARTH JOKE-BOOK!

Compiled by the Mothers of Construction Crew
Illustrated by Mark Mitcham

Dear Mr. Brand—

Enclosed are some Mole jokes that we thought you might be interested in using for your section on animal stories.

Mole jokes first originated around our house because my father and some other friends and I work on a construction crew and the work gets very tiring. To take our minds off our weariness, and to keep tempers from flaring, we look for any thing to babble about, and all of us having a (reader fill in) sense of humor, we started thinking of jokes.

We started out telling each other Polish jokes, but none of us being Polish, we decided that really wasn't in good taste; not to mention the poles we were building with were getting offended. Then we tried ~~#~~ telling Catholic jokes, but all of us being Catholic, we started getting offended.

One of our first jobs was building some hermitiges for some nuns, so naturally we threw out a few hermit jokes. Some of these were fairly good/bad, but we soon ran out of material. *[see inside back cover]* None of us being moles, we turned to mole jokes. I'm not sure why; but everybody knows that moles are much funnier than hermits, and don't get offended nearly as easily.

As the fad for Polish (or Black, Italian, etc.) jokes rages on, people tend to overlook minority groups such as the moles, who are entitled to their fair share of discrimination, and are more than willing to help ease the pressure on the more over-worked minorities.

I would like the book back, so enclosed is a self-addressed-stamped envelope. Thank you for your time.

Sincerely yours,

P.S. For what its worth, I'm 16.

Mark Mitcham
Mothers of Construction Crew

Q. What is a mole made out of?

A. Molecules.

Q. How did the lady feel after attending an Erherd Seminars Training session led by a mole?

A. Molested.

Q. How did the revolutionary mole propose to overthrow society?

A. By using moletov cocktails.

Q. What happens when a mole falls into a volcano?

A. He becomes moleton.

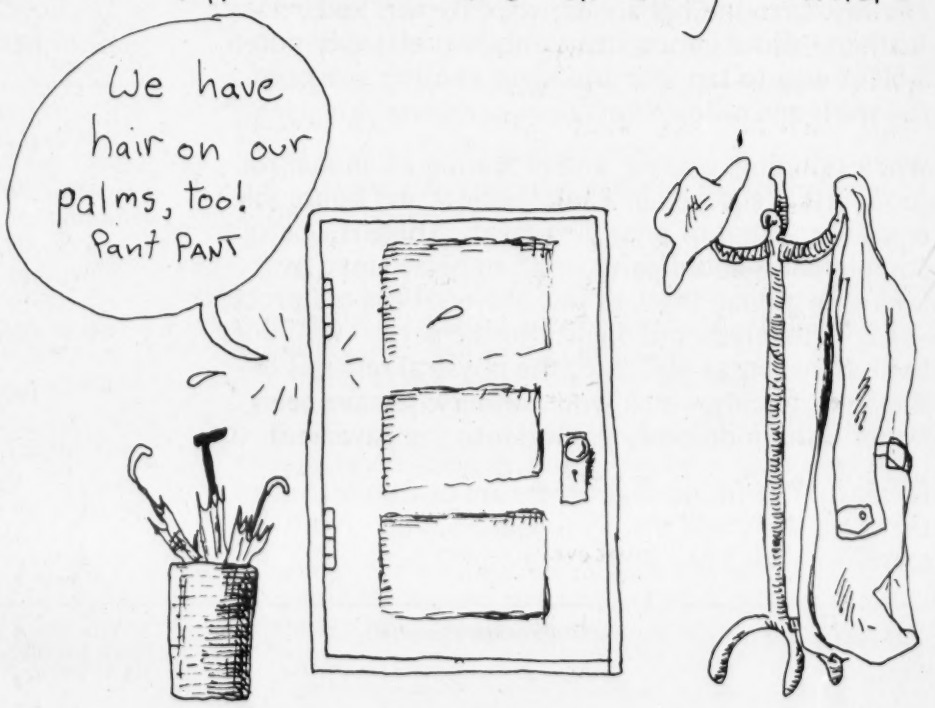
Q. What horrible disease does Johnny have?
A. Molescular Dystrophy.

Q. What is the name of a best-seller Mole cookbook?

A. Roots, by Alex Moley.

Q. Why did the mole continue to do Obscene things in the closet after his mother told him not to?

A. Moles are already blind.



Q. Who was the greatest mole dramatist?

A. Moleière

(Vegetarians, Pass By)

HOW TO USE ROAD KILLS

BY DOUGLAS ELLIOTT

THERE ARE FEW OF US who don't feel a twinge of pain or sorrow when we pass a dead animal on the road. Some express their pain by sporting, "I brake for animals" bumper stickers. Braking for animals is of course a fine idea, but in most cases an animal traffic fatality is so sudden that neither the animal nor the driver knows what hit them. The blame must be shared by all of us who participate in this high speed mechanized society. Finding ways to respectfully atone for these casualties is important.

I have taken to picking up many of these animals, using their fur and feathers and dining on the meat if it is fresh. Using road kills in this manner nourishes my being in many ways. I can eat good organic meat, and my surroundings are enriched by furs and feathers. More importantly, this is a relatively non-violent way to tap into and savor another aspect of the spirit and wildness of the natural world.

When skinning, gutting, and preparing an animal for food, one is engaged in a very ancient and honorable endeavor — that of providing meat. There is a certain completeness and dignity that can be attained by taking an animal through this universal age old process — a completeness and dignity to the person who does the butchering as well as to the physical remains of the animal-being which would otherwise have been rather disharmoniously ground into the pavement.

Recently I've found that others are out there doing the same thing and thanks to Gary Snyder, roadside scavenging has been transformed into poetry.

How did a great Red-tailed Hawk
come to lie — all stiff and dry —
on the shoulder of
Interstate 5?

Her wings for dance fans

Zac skinned a skunk with a crushed head
washed the pelt in gas; it hangs,
tanned, in his tent

Fawn stew on Hallowe'en
hit by a truck on highway forty-nine
offer cornmeal by the mouth;
skin it out.

Log trucks run on fossil fuel

I never saw a Ringtail til I found one in the road:
case-skinned it with the toenails
footpads, nose, and whiskers on;
it soaks in salt and water
sulfuric acid pickle;

she will be a pouch for magic tools.

The Doe was apparently shot
lengthwise and through the side —
shoulder and out the flank
belly full of blood

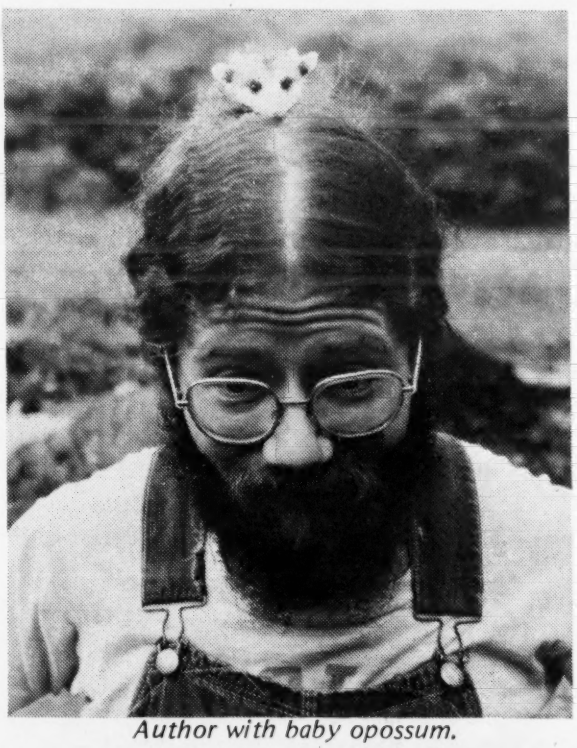
Can save the other shoulder maybe,
if she didn't lie too long —
Pray to their spirits. Ask them to bless us:
our ancient sisters' trails
the roads were laid across and kill them:
night-shining eyes

*The dead by the side of the road.**

Douglas Elliot lives in Burnsville, North Carolina.

— SB

**"The Dead by the Side of the Road" from *Turtle Island* by Gary Snyder, 1974 New Directions Books, 333 6th Ave., New York, New York 10014.



Author with baby opossum.

THERE ARE SEVERAL THINGS that I consider when I'm deciding whether to take some tender young beastie home to dinner. The first thing I look for is a warm body. In the case of warm-blooded animals (especially in cool weather) this indicates that the animal was killed very recently. Another good indicator is the blood. If the blood is still somewhat liquid, the animal is fresh. I examine the eye to see if it is still clear and holding its form. As the time after death increases, the eye gets cloudy and soft, and after a day or so it starts to cave in. *

If you pick up an animal and it later gets stiff with rigor mortis, you can take comfort in this. Rigor mortis sets in a few hours after death as the muscles cool, and it indicates that the animal is fairly fresh. Of course smell is one of the best indicators. If an animal smells "ripe," I won't eat it. There is often a strong visceral smell that is associated with the cleaning out of the entrails from the body cavity. This is different from the smell of decomposition and with a little experience and discriminating nose work, the difference will come clear. **

Perhaps you are new to the delights of carrion eating and you are a little unsure of your judgment in these matters. Just what are the consequences of eating spoiled meat? Apparently there are none if it is sterilized by cooking. According to my research, "spoilage" is a relative, cultural term. It is caused primarily by bacteria and other organisms but these are all killed by the heat of thorough cooking.

There are some basic techniques of wild meat cookery that you can use to turn this raw material into gourmet fare. It is regularly accepted that the quality and taste of an animal's flesh is often characterized by its diet. Generally it is considered that vegetarian, herbivorous creatures have milder tasting flesh than carnivorous animals. Duck hunters will tell you that plankton and algae-feeding ducks are better eating in the dead of winter than in the summer when there is a higher percentage of animal life in the water. Mergansers and other fish eating birds are known for their strong tasting flesh. A traditional way of preparing an opossum is to keep it in a cage for a few weeks and "clean it out" with a diet of corn meal, milk, molasses and other delights. (It sort of reminds me of the Inca sacrifices of the child-kings.) To me, a mild, gamey flavor provides a taste thrill. However, like most good herbs, spices, and other flavorings, there is such a thing as too much. Moderating this gameyness is one of the tasks facing the aspiring wildmeat chef.

I USE SEVERAL TECHNIQUES. First I soak the meat in salt water for a few hours to draw out the blood. Apparently this is a custom of American origin, because many European game recipes call for saving the blood and stirring it in later to make gravy. Then there's marinating. This means soaking the meat for eight to twenty-four hours in a solution of vinegar (or wine), oil, herbs, and spices. Marinating tenderizes as well as flavors the meat. There are as many kinds of marinades as there are cookbooks. My recipe goes something like this: a cup or two of good vinegar, a dribble of flavorful oil (olive is great), two or three crushed cloves of garlic, a small sweet onion, a couple of crumpled bay leaves, a pinch of celery seed, a sprig of thyme, basil and rosemary, a few crushed juniper berries, and a crushed spicebush berry. Parboiling is a way of dissipating some of the flavor of the meat as well as tenderizing it. All you have to do is boil the meat thirty minutes at the most before using it in whatever recipe you decide to follow.

[more →]

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* Fred Funk, taxidermist at California Academy of Sciences, also cautions that all birds, except the English sparrow and rock dove (common pigeon), are under Federal protection. This means that if you pick up that dead bird beside the road, and a game warden sees you do it, you may be subject to fine. If he sees you. However, you could say that you are going to give it to a local wildlife museum, etc. He also warns that anything which has been washed up on a beach is very dubious. Chances are they have died from disease, and may have been dead for a long time. Seals can give humans a severe skin irritation called seal finger.

There are several things to check for in dead animals. The first place to begin deteriorating is the abdomen. If the animal has been killed by impact, the viscera is usually ruptured, which releases the digestive juices, setting in motion deterioration. You can tell if that has begun by grabbing and tugging the skin. If there's any slippage, check further up, to determine how far the spoilage has gone. There is usually something that can be salvaged, even if only skeletal and skull. Even if the skull is crushed the skin is often intact, and a whole skin can be obtained.

Things to check for in dead animals:

1. Are there any abscesses in the muscle tissue (sores)? Discard this meat.
2. Are there signs of parasites in lungs, heart, stomach, liver, muscle tissue? Cook this animal's meat well.
3. Be careful handling rodents, especially rabbits. They can carry such things as bubonic plague and Tularemia, which can be transferred to humans.
4. Keep an eye out for the game warden.

— Evelyn Eldridge

** Peter Warshall requests that even if you decide not to harvest the corpse you're inspecting, you'll do a service if you toss it out of the way of traffic. Numerous predators beside yourself are interested in the meat, and it would be well if they were not smooshed while dining. Failure to perform this courtesy can lead to a two-dimensional pavement display of the local food chain.

— SB

AS FOR PREPARING THE SKINS, there are particular problems related to the various types of animals you might find. With mammals there are basically two methods of skinning – the case and the opened-skin method. (See *Figs. 1 & 2.*) The best blade for skinning is either a razor or a very sharp knife. Cut along the lines indicated, trying to cut just through the skin and not into the body cavity. This keeps the job cleaner. The basic method after the incisions are made, is to pull firmly on the hide and to use the blade to cut the translucent tissues that connect the skin to the body (*Fig. 3*). If the animal is bleeding and you are concerned about protecting the skin, sprinkle the bloody areas with cornmeal as an absorbant. As you get to the head go carefully around the ears, eyes and mouth.

Fig 1

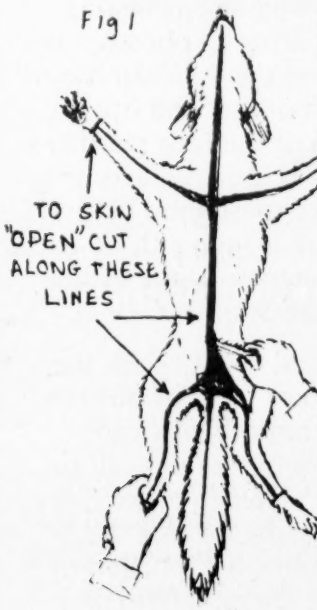


Fig 2

Your first skinning job will probably be sloppy and time consuming. But experience is the best teacher and after you've done a few, the rest will come much easier and faster. On the Eastern Shore of Maryland during the height of muskrat season, there is the Annual World Championship Muskrat Skinning Contest. In recent years, it has been won by a trapper from the Louisiana bayou country. The record time is five muskrats in less than one minute, and the skins are all in good condition. I feel like I'm doing well if I get one done in less than half an hour.

One handy tool for skinning out the tails of animals like fox and raccoon is an old umbrella rib, which is a narrow strip of steel shaped like a "U" in cross-section. This is slipped under the skin and slid down the length of the tail. Once in place, it will serve as a mini-trough or guide for the blade to follow. This will assure a straight cut the whole length of the tail (*Fig. 4*).

Once removed, the open skin is stretched by tacking fur side down onto a board (*Fig. 5*). The remaining bits of flesh are scraped off with a knife, a sharpened spoon, or whatever tool you can improvise. This is called "fleshing." After the hide is fleshed, a little borax may be rubbed in as a preservative and the skin put in a warm place to dry. This usually takes a few days to a few weeks depending on the humidity and temperature and the thickness of the skin.

The case-skinned hide is treated basically the same except you have to improvise a flat, bullet-shaped stretcher sized in proportion to the animal hide in question. This can be cut from a board or made from a bent piece of springy steel wire (*Fig. 6*). I once cut one out of a piece of stiff cardboard for a weasel skin. The hide is slipped like a glove over the stretcher. For the fur market, cased hides are usually stretched with the flesh side out, but for my personal use, I usually leave the fur out.

AFTER THE ANIMAL IS SKINNED and if you plan to eat it, then the entrails must be taken out. This involves cutting into the abdominal cavity, reaching in and pulling out the guts. It may seem a little yucky at first but there are ways to get into it. Look at those colorful organs! You've got a basic anatomy course right before you. Can you identify them? Sometimes I open the stomach to see what the animal has been eating. The stomach contents of plant-eating animals usually have a pleasant herbal smell that's a refreshing contrast to the strong visceral smells wafting from the body cavity. You may want to save the liver to cook or add to the gravy. If you do, carefully remove the gall bladder which is on the underside of the liver. Don't allow any of its contents to drip onto the meat. (You've heard the expression, "bitter as gall.") Above the diaphragm in the chest cavity are the heart and lungs. These parts can also be used in gravies and stuffings.

Fig 3

Fig. 4

FIG 5

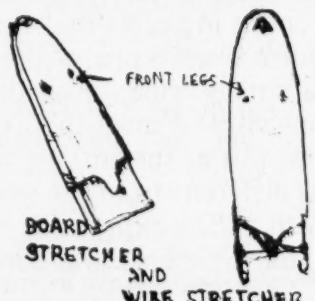


FIG 6

Some mammals have scent glands on various parts of their body that can adversely affect the taste of the meat. Deer have glands in the hock or "elbow" of the hind legs. Be careful not to touch or cut into these while preparing the meat. Certain other small animals have four waxy corn kernel-shaped glands. If you take note of these and remove them, most of your battle against excessive gameyness is won. In the muskrat, there is one gland under each fore and hind leg. In the opossum, raccoon, woodchuck, and porcupine there are two glands in the small of the back and one in each front "armpit." (You thought *you* had gamey pits.)

DEER

YOU ARE REALLY INTO A BONANZA if you find a fresh killed deer. In most states however you can be busted for possession of a deer out of season if you don't have a hunting license. This is true of any game, but the penalties for deer tend to be the heaviest. Deer are also harder to conceal. If you want to pick up the road killed deer and appear legal during the hunting season, you can buy a license and the proper stamps and tags and say that you shot it. Out of season, there is usually no legal channel. If you report it to a game warden, their common policy is to confiscate the meat and donate it to a government financed institution such as an old folks home or a school.

With fresh venison, the longer it is cooked, the tougher it gets. The recipe I use goes something like this. Heat a skillet till red hot. Put a dab of grease on it and then rub half an onion over the surface. Throw a thin slab of venison in such a manner that it skids lightly over the surface of the pan and is caught on a waiting dinner plate where it is to be served immediately. (This is hardly an exaggeration.) I also recommend venison jerky. Lean meat is cut into shoelace-like strips and hung over sticks in the smoke of a fire till it is dry. The venison shouldn't be so close to the fire that it cooks. It takes on a delicious smoked flavor and makes a tangy, high-protein trail munchie.

THE BUCK-TOOTHED VEGETARIANS

RABBITS AND SQUIRRELS are mild flavored and hardly need any preliminaries. They can be fried, stewed or even stuffed and roasted. Rabbits have a particularly thin, delicate hide that tears easily when skinning, so don't be discouraged if you have trouble getting it off whole.

In some parts of the country (the west and southwest in particular), rabbits sometimes carry tularemia (spotted fever) and bubonic plague, so it is important to know the area where you pick up rabbits. (Check with local wildlife people, game wardens, or veterinarians.) Wearing rubber gloves is often recommended when dressing rabbits. It's all right to eat a rabbit with tularemia as long as it is well cooked; it's only in the raw state that it can cause problems.

Other rodents like muskrats, porcupines and woodchucks are also good eating, however, a little parboiling and marinating is in order with these.

THE CARNIVORES AND OMNIVORES

RACCOONS AND OPOSSUMS are common highway fatalities. Since they have a varied diet, the flavor of their meat is often a function of what they've been eating. The salt soak and vinegar marinades as well as parboiling is usually called for.

I have eaten fox meat on one occasion and it was quite good. After soaking and parboiling, I browned the pieces in a skillet with onions and simmered them in their own gravy. We cooked up some potatoes and steamed some wild amaranth and lambs-quarter to round out the meal.

WILDFOWL

CLEANING AND DRESSING BIRDS: the main question is – to pluck or not to pluck. To remove the feathers you can either pluck the bird or skin it. There are advantages to each. When the bird is plucked with its skin left on, it has a tendency to cook better because the skin usually holds in the moisture as well as the fat. Plucking the bird dry is somewhat messy because the feathers fly about and also stick to your hands. (This is less of a problem with small birds.) The best way to remedy this situation is to scald the bird in a pot of boiling water with a little detergent added if the bird is oily (especially in the case of waterfowl). The detergent cuts the oil so the water can soak through to the skin.

I usually prefer to skin the bird for a couple of reasons. First of all, it is less time consuming.

Secondly, I like to keep the feathers for decoration, etc. This way they are anchored, won't blow around, and are in the same arrangement as they were on the bird. Soaking the feathers makes them difficult to reclaim. Also, with some fish-eating birds, the strong flavor is in the skin and fat and they should be removed even if the bird is plucked.

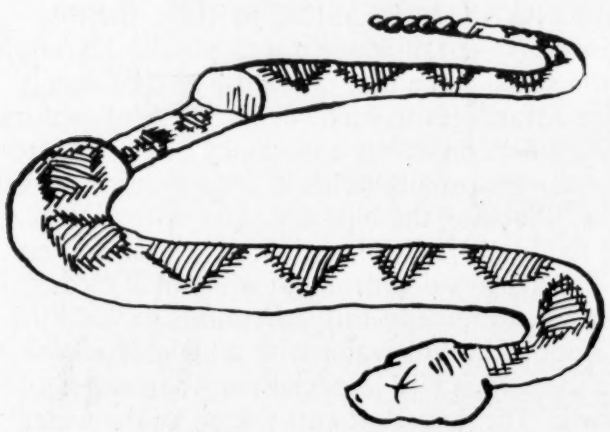
If you want to save the skin, rub it with borax and dry it. I don't usually stretch bird skins but I often pin the wings out-spread till they dry. These are great for fanning fires and for ornamental or ceremonial purposes.

Pheasants, grouse and quail are the real prizes of the prolific pavement. They are mild tasting, have large breasts of white meat, and, like turkey, are well suited

to stuffing and roasting. These as well as other birds can be cooked the same way that you cook any poultry. I have eaten doves, ducks and railbirds, as well as various songbirds. I even ate crow once and found it delicious enough to be worth losing election bets on a regular basis.

REPTILES

SNAKES are often highway casualties, especially in the spring and fall when they crawl onto the roads to absorb a bit of extra warmth. All kinds of snakes are edible. I have tried rattlesnakes, copperheads, and rat snakes and have found them all quite good. Filet mignon, which is considered to be the best cut of beef, comes from the muscle right along the backbone. When you look at a snake, you will realize that it is practically all filet mignon. Snakes should be at least a couple of feet long to have enough meat on them to be worth eating.



I usually skin a snake by cutting around the neck and then down the belly. The skin pulls off rather easily and the entrails literally drop out, making it one of the easiest animals to clean. The skin should be tacked out and fleshed before it has a chance to dry. The meat is white and mild flavored but tough. It should be cut in pieces and parboiled for about twenty minutes. After which, I usually like to roll the pieces in flour and fry them like chicken.

Turtles are another common roadside attraction. They are somewhat more complicated to prepare but quite worth the trouble. I have only eaten water turtles. But I do know people who have eaten various types of land turtles including the common box turtle. There is a bit of controversy about the safety of eating box turtles because they are known to eat certain mushrooms that are toxic to humans. They supposedly carry some of these toxins in their flesh. I don't know if this is true.

Turtles should be dropped in boiling water for ten to twenty minutes. When the toenails pull off easily, take the turtle out of the pot and allow it to cool. Then the skin can easily be peeled off and the turtle dismembered. If the shell isn't cracked open, keep the turtle on its back to conserve the juices. You can save the liver as well as the eggs (if any) for stirring into the soup or a sauce. If you're really getting into it, you can suck the eggs raw right out of the turtle. Once you have the meat, you can incorporate it into a soup or a spicy creole sauce. I have also enjoyed turtle-burgers and a snapping turtle pie.

AMPHIBIANS

ALTHOUGH I HAVE NEVER EATEN a road killed bullfrog, most people know that frogs' legs are a delicacy. Simply skin the legs, roll them in batter, and fry them gently.

The only other amphibian I've tried is a hellbender, which is a monstrous, creepy, water-breathing salamander more than a foot long. What it was doing strolling along the road that fateful, rainy night, I'll never know. It was such an outrageous beast that I had to try it. After a bit of difficulty removing the slimy skin, a few friends and I fried it up. After bolstering each other's courage, we sampled it and decided that although it was somewhat fishy and tough, it was certainly passable fare for scavengers, but nothing to serve to the gourmet club. I also have since read that some salamanders, like toads, have toxins in their skin and should be treated with caution.

MOST OF MY RECIPES have been fairly general because I have found that game can be used in almost any meat or poultry recipes. Many oriental recipes are particularly applicable to road kills because they use meat sparingly, more as a seasoning than as a main course. Limited quantity is often the case with road kills. Have you ever tried to turn a red squirrel into a dinner for five? I'd like to leave you with a couple of my favorite carcass-stretching recipes. The first is a fried rice dish.

> Cooled, fluffy, precooked brown rice, small cut up pieces of meat ready for the final cooking, onion, garlic, green pepper, carrot (and/or any other non-starchy vegetable on hand), ginger (whole or powdered), any other of your favorite herbs and spices.
>
> Fry the meat thoroughly in oil adding sliced onions, garlic and ginger toward the end. Next add the rest of the rice, vegetables and seasoning. Stir fry them for a few minutes more, keeping the temperature high. Garnish with sprouts and parsley if you like and serve with a good soy sauce.

Another favorite is this adaptation of a traditional Italian sweet/sour game dish.

> Cut up meat, vinegar, good oil or butter, onion, stock, (i.e., broth made up of vegetables, herbs, and if you like, the heart, lungs and liver of the animal), honey, chocolate, almonds, raisins, and your favorite seasonings.
>
> Soak the pieces of meat in vinegar, wipe them and sauté them in the oil or butter with seasonings. Add the stock and simmer slowly. Fill a wine glass one-third full of honey and add vinegar to it till you have a nice sweet/sour balance. Mix them well and add it to the meat when it is nearly cooked. Add a handful of shredded almonds and raisins, a teaspoonful of grated chocolate and finish cooking. The gravy goes well over potatoes or rice. ■

THE DEATH AND RESURRECTION OF

old blue

A TOUCHING STORY WITH A SCANDALOUS END

BY CHARLES FOX

Illustrated by Jay Kinney

OLD BLUE: On June 20, 1977, gradually. 1966 2-door Fastback Impala. Beloved car of Charles Fox, noble servant of friends & family. Committal at Mac-Andy's Used Auto Parts, Mill Valley. Private. No flowers please. Donations, in lieu, to Institute of Scrap Iron and Steel, Inc., Wash., D.C.

The space in the drive where I am so accustomed to see her, waiting among the fuchsias where the hummingbirds busily feed, is empty. There are only her footprints in the dust, leading away.

She was beginning to sometimes wander absentmindedly about the road. Arteriosclerosis of the transmission was advanced and there were grave lesions in her seat covers. It was best.

The average life of today's autos is 9-1/2 to 10 years say the men at Ford. That's about 120,000 if you ride to the end of the line. Old Blue did 12 and 137,000. I bought her for $250 three years ago. I bought a battery and a generator for her and otherwise nothing but service parts in 40,000 hard, fast miles. I was hoping for twice around the world.

What now, I wondered, when it was clearly time for her to go. In our city youth we left old 'uns in the tow-away zone as the eskimos left their old folk, in a sheltered spot on the ice, to wait for the Great Spirit, and moved on. But about here there's no such place. When "Chunky," Edith Crow's '63 Nova convertible gave out after 230,000 miles, she had it pressed into an 1800-lb. bale and mounted outside her home in Middletown, Pa. At the unveiling 200 neighbors murmured champagne toasts and presented Edith Crow with a goldplated Chevy hubcap.

But Old Blue wouldn't appreciate being held in bondage by such sentimentality. She must be allowed to return to the universal automotive consciousness. To break the karmic wheel – if this were her destiny. Being a nosey sort I pondered her destiny. What is the nature of the hereafter for old Chevy's, I wondered.

Mac-Andy's, the corpsman, gave me $25 for Old Blue because she came in under canvas. They stripped her gold fillings, picked her glass eye, her generator and starter motor. They plucked her battery, stripped her of her tires and gas tank. Then they trucked her gaping carcass across the bay and sold her to Schnitzer Steel in Oakland for about what they paid for her, maybe a little more. The market for scrap fluctuates erratically between $25 and $40 a ton. "Any Old Iron" is no game for the faint-at-heart.

[more →]

Charles Fox, local chap, also sold this account to **Car and Driver**, *who printed most of it. Changing the scandalous end will require some citizen and legislator action.*

–SB

What's in Old Blue for Schnitzer, I asked. Back in Detroit Edd Snyder at Ford came up with the answer. If you bought an average-sized Ford last year you got:

Material	Pounds: Average Car	Pounds: Total Ford Usage (000,000)
Aluminum	165	370
Cast Iron	620	1,600
Copper	35	125
Steel	2,345	6,450
Glass	90	190
Lead	30	65
Plastics	165	525
Sound Deadener	85	175
Rubber Products	180	390
Zinc	35	105
Anti-Freeze	20	55
Fuel	50	120
Oils/Other fluids and lubricants	280	825
	4,100	10,995

With 322,000 tons of steel you could build yourself four Enterprise class carriers and six Nautilus-type nuclear attack subs. And that's just a drop in the bucket. There are more than 124 million cars and trucks on the road in the USA. Last year almost eight million weren't re-registered. 6.8 million cars, 1.09 million trucks), according to R.L. Polk & Co., who keep tabs on these things. R.L. Polk & Co. are the people who tell Ford that 95 per cent of the pick-ups it made in the last 10 years are still on active duty—or whatever the commercial says. Nobody knows what happens to all those that fall by the way. As Hershel Cutler, executive director of the Institute for Scrap Iron and Steel (ISIS), the Any Old Iron lobby in Washington, says, "The problem with trying to keep track is that the input is heterogeneous and the output homogeneous."

In other words, the shredders and shearers and bailers of this country gobble up old washers, toasters and Kelvinators just as readily as T-Birds, Cadillacs and Old Blue.

Some get shredded, some rust away in scrap heaps, some are cannibalized. And then there are those among us who see a pride of old Pontiacs growing out of the burdock in the front yard as a status symbol.

Old Blue went to the shredder. The Schnitzer shredder, an awesome machine that feeds on old hulks like a Pitney Bowes franking machine snatching envelopes. It crushed Old Blue as it ingested her, and 30 seconds later she was in fist-sized pieces. The upholstery with the milkshake stains, the headliner with the tear the children made with the canoe paddle last summer, the cracked radio speaker, the radio, the window on the passenger door fallen down from too much slamming (mute testimony to the basic disregard of others). All of her. The Schnitzer shredder is a million dollar machine. It turns five or six hundred cars a day into poker chips. Five days a week is 120,000 cars a year, minimum. That makes Schnitzer a major processor. There are 25 such plants in the country and 1,300 smaller ones.

Schnitzer has a capital investment in machinery of close to $3 million. It relies on its shredder although there are all kinds of devices in the scrap business — Balers for light scrap, Turnings Crushers, Briquetters, Motor Block Breakers, Alligator Shears and Guillotines to chomp steel I-beams, buses and other heavy stuff. It's a developing art, dealing with our solid waste. The scrap processors can handle 100 million tons a year of "obsolete" scrap (as consumer junk is known in the trade), and "prompt" scrap (left over from the manufacturing process). "Home" scrap is generated in the making of new steel; it never leaves the mill.

But American processors don't work to anything like capacity. This country is a surplus scrap producer. In fact the Battelle Memorial Institute, which made a study of the situation with Price Waterhouse and Co., reckons there is a billion tons of surplus ferrous scrap piled up in the USA. And the pile is growing at the rate of 30 to 40 million tons a year, or 40 per cent of the annual newly obsolete material. Imagine a billion tons of scrap. I can't. At this rate it'll hit 2 billion tons soon after year 2000. What a monumental way to welcome our second millenium.

And to go with this mountain there'll be an equally tremendous hole in the ground. Here at home over the last five years we've dug out 90 million tons of iron ore annually, while importing another 50 million.

But I'm getting ahead of Old Blue's journey into the hereafter. We left her being dragged clanking and crunching, into the shredder. Thirty seconds later she was spat out in little bits, as a man spits out a bitter almond. Old Blue was spat onto a conveyor which rolled her shreds beneath a giant magnet that picked up the iron and steel in her. The rest, I think, passed on into a series of large drums filled with a ferro-silicon solution, adjusted to various specific gravities. Every metal has its own specific gravity, so different components will float in different baths. This way her zinc, aluminum and copper can be retrieved. As with medieval witches, the good floats and the bad sinks.

With smaller machinery, things like electric motors, the intricately meshed metals could only be separated by hand — if at all — until someone recently came up

with Cryogenics. Take your electric motor and dip it into a bath of liquid nitrogen which freezes it to about −300°F, a cold night on Pluto. At this temperature metal becomes brittle and shatters like glass, and the components can be separated with ease.

Beyond the shredder the fate of Old Blue becomes cloudy. She begins increasingly to merge with the universe. By now her tires have been either ground to powder and used in asphalt – a major use in Colorado and catching on elsewhere – or, more likely, Mac-Andy has hauled them to the dump. The grinding process costs the junk man two bits a tire in California and hauling them to the dump is cheaper. Her plastic and upholstery, exiting the shredder as dust, will have been hauled by Schnitzer to some other land fill. There is work afoot to use this stuff as fuel for steam, but for the time being it's the most wasted by-product of the whole scrapping process.

But the bulk of her has no doubt sailed in the belly of a Schnitzer ship to Japan or Taiwan. That's where Schnitzer sends most of its scrap. It owns a fleet of 23 ships, registered in Seattle, where the head office is. Shipping seems to make Schnitzer most of its coin.

Other countries buy a lot of our junk too. Spain, England, Italy, West Germany. It makes good steel, cleaner and cheaper than that made from virgin iron ore. You can best see the difference in the table below:

Environmental impact comparison for making 1,000 tons of a steel product as reported by the Environmental Protection Agency.

Environmental Effect	Using Virgin Materials such as Iron Ore	Using 100% Waste such as Iron and Steel Scrap	Savings from Increased Recycling (%)*
Virgin Materials Use	2,278 tons	250 tons	– 90
Energy Consumption	23,347 x 10^6 BTU	6,089 x 10^6 BTU	– 74
Air Pollution Effluents	121 tons	17 tons	– 86
Water Use	16.6 million gallons	9.9 million gallons	– 40
Water Pollution	67.5 tons	16.5 tons	– 76
Consumer Wastes Generated	967 tons	−60 tons	−105
Mining Wastes	2,828 tons	63 tons	– 97

*Negative numbers represent a decrease in that category resulting from recycling. For example, air pollution effluents are reduced by 86% when scrap iron is used instead of iron ore.

The Environmental Protection Agency reckons that steel from scrap costs $12 less per metric ton than steel from ore – that's 5% of its selling price. Over $4 of that is saved in pollution costs. But it's not only Old Blue's steel that would be better off used at home. There's her aluminum, and copper. Both of these metals take about a twentieth as much energy to recycle than to make up from virgin ore. The amount of steel being re-cycled has stayed pretty well constant in the last few years. That is, around 40 million tons. There was a big upswing in 1974 which had to do with the energy crisis. That year, domestic steel mills bought a record 51.3 million tons of ferrous scrap, still less than half what was available.

The processors had a heyday. So did the rest of us, know it or not. The Environmental Protection Agency reckons that for every 1,000 tons of steel made from ferrous scrap there's an energy saving equivalent to 140,000 gallons of gasoline. So in 1974, the energy savings amounted to 7.2 billion gallons of gasoline. That was enough to drive 40 million cars doing 15 miles-per-gallon 11,000 miles each. That's about half the total energy consumption of American autos per annum. Didn't know you had it so good, did you? Next year, when the "crisis" passed, U.S. steel companies bought 28% less.

So why were Old Blue's bits shipped to Japan, you ask? Me too.

The answer's simple. The Federal Government gives you your money back if you go digging in the ground for iron ore. It's called a depletion allowance. You can write off the cost of finding the stuff and digging it out at the rate of 15% per year. It works just like depreciation on a house. If you import iron ore you get 14% tax benefit. If you choose to mine that great mountain of ferrous scrap already above ground, you pay freight rates three times as expensive as for hauling iron ore. That's thanks to the Interstate Commerce Commission, the body which regulates such things. The ICC stoutly and bafflingly maintains that scrap iron and iron ore are not competing substances. Both end up as the same commodity. Which would you use if you were making steel for a living?

It's not surprising then that U.S. steel mills are umbilically attached to their own iron ore mines. Contracts here are long term. The longest contract a scrap processor gets is 30 days. Any old iron!

A lot of people feel that the problem is we'll run out of virgin ore. But Barry Commoner, Ecologist and Head of Washington University's Center for the Biology of Natural Systems, warns bluntly, "So long as we rely on non-renewable sources of energy we will run out of our ability to afford it long before we run out of the energy itself. It's no accident that we first experienced double digit inflation when the previously constant price of energy began to escalate in 1973." He's talking about gasoline. He's also talking about natural gas. Industry uses about a third of our supply of natural gas and the steel industry takes 12 percent of that.

If you don't want the government to go on paying people to dig holes in the Earth and holding up our garbage collectors, write to the Interstate Commerce Commission in Washington or the Senate Commerce Committee and tell them, "I'm mad as hell. . . ."

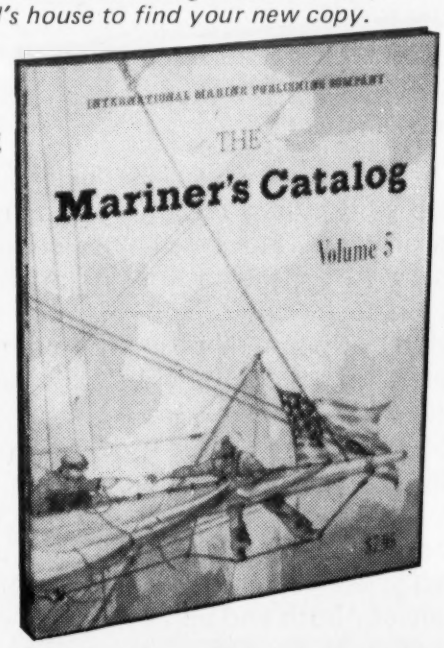
Japan and Co. won't thank you. Even as you read this they're getting set to sell Old Blue back to you and me as a Toyota or a Nikon or a cheap tin tray. Look who's got the last laugh. So long, Old Blue. ■

Nomadics

The Mariner's Catalog Volume 5

In case you hadn't noticed, we've been liking these folks for some time now. Their latest catalog is like its sisters — nonredundant, competent, funny, Down East, fascinating and indispensable. They tend to encourage local travel: you have to go to your friend's house to find your new copy.

—J. Baldwin



The Mariner's Catalog
(Volume 5)
George Putz and Peter H. Spectre, Eds.
1977; 192 pp.
$7.95 postpaid
Back issues are available: Vol. 1 & 2, $4.95 each; Vol. 3, $5.95; Vol. 4, $6.95.
from:
International Marine Publishing Co.
21 Elm St.
Camden, ME 04843
or Whole Earth

Super Resin

When we heard that there was a resin material that worked as a glue, a laminating resin, or a sealer at tempreatures down to 2°C. and would both bond and cure *underwater*, we had to go looking. Found it at:

Industrial Formulators of Canada, Ltd.
3824 Williams St.
Burnaby, B.C. V5C 5P2
Canada

Crank It

Ladies and gentlemen, the handpowered outboard, from:

Finn Machine Products Co.
P.O. Box 396
Lithia Springs, GA 30057

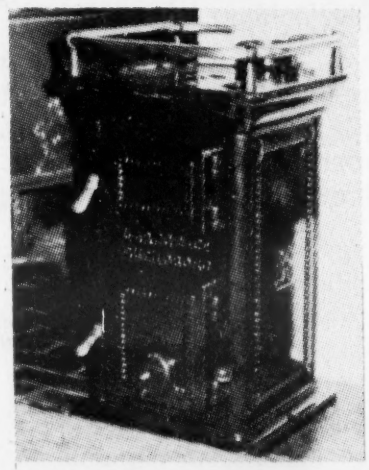
wholesale from the factory, $59.95
retail is in the $75.00 range

Finn Machine's handpowered outboard. This thing really works.

Warmth Plus Beauty

A perfectly beautiful ship's heating stove, burning wood, coal, or peat, and made by Lange in Denmark, is distributed in this country by:

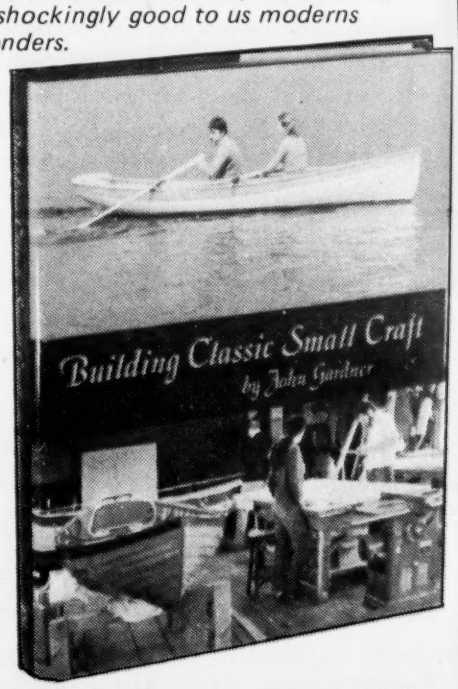
Southampton Stove Co.
75 Herrick Road
Southampton, NY 11968



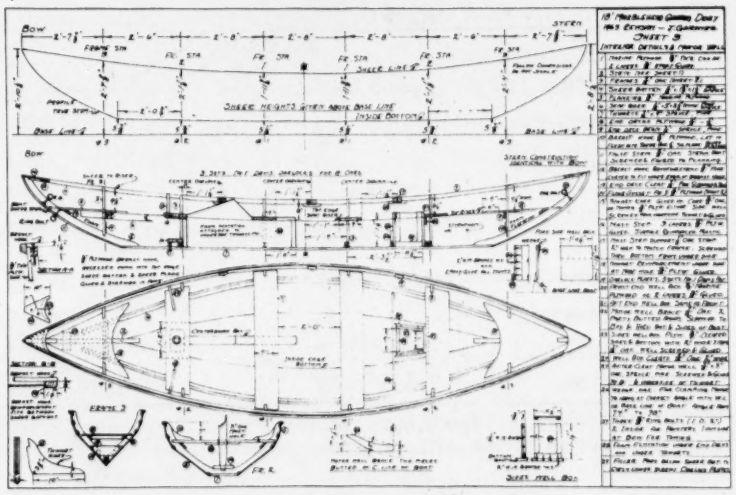
Building Classic Small Craft

Ah yes, another boat building book. We've shown many in the hope of encouraging people to build and sail small craft as a means of learning what it feels like to manage a sophisticated technology at an understandable scale. This book is not a step-by-step manual, but rather is a collection of refined traditional designs. Mr. Gardner, the authority in these matters, gives extensive history for each type and presents suitable drawings and construction details. Where it is intelligent to do so, he suggests appropriate modern materials as a substitute for traditional materials that are no longer available or that were never very satisfactory. Many of these designs are the culmination of centuries of experience and are still very good; even shockingly good to us moderns raised up on fiberglas wonders.

—J. Baldwin



Building Classic Small Craft
John Gardner
1977; 300 pp.
$20.00 postpaid
from:
International Marine Publishing Co.
21 Elm Street
Camden, ME 04843
or Whole Earth



Using a gunning dory for lobstering is like hitching a spirited horse to a dump cart. But this superbly beautiful double-ender of ultra-light construction stood the gaff for several years in spite of advanced age and the roughest sort of treatment. Even under huge loads of lobster pots it rode the waves lightly, with infinite grace and with only slight urging on the oars. The gunning dory as perfected in Marblehead by William Chamberlain is the queen of all dories, and one of the handsomest double-enders ever built anywhere, not to mention its easy speed under oars and its unexcelled rough-water ability with capable hands at the oars.

The Ash Breeze

I've met a fair number of people I didn't like, but never in or around a small traditional boat. The quality of reserved friendliness common there is also apparent in this newsletter, just launched. Add it to **National Fisherman** *and* **Woodenboat** *as a useful and enjoyable periodical.*

—SB

The Ash Breeze
(The Traditional Small Craft Assoc. Newsletter)
$10.00/yr (includes membership in Traditional Small Craft Association)
from:
Membership Secretary
Traditional Small Craft Association
P.O. Box 350
Mystic, CT 06355

Gloucester fishing schooner powered by an "Ash Breeze"

•

"Hey mister, where do you get all that crooked wood, huh mister?" A varnished boat: "How do you make it look so much like wood?" A painted boat, tapped, kicked and felt: "It IS WOOD!" Looking at my canoe: "Where do you buy em mister?" answer, "K-Mart." "Do they sell kits?" answer, "Yes!" And all of this with a straight face.

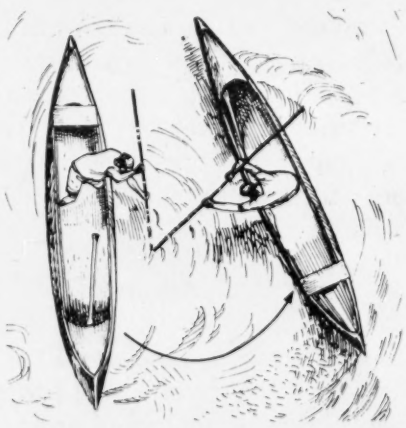
—Pete Culler

Canoeing

The venerable, dull, unfriendly and outdated Red Cross canoe manual has been totally redone. It's now one of the very best available. The illustrations by Richard Guy are the clearest I've seen anywhere, and show nonwhites in action too for a change. The whitewater section is particularly good. Also included are sections on canoe poling and sailing, and of course first aid in the usual Red Cross manner. It's friendly now, too.

—J. Baldwin

Canoeing
American Red Cross
1977; 452 pp.
$4.95 postpaid
from:
Doubleday & Co., Inc.
501 Franklin Ave.
Garden City, L.I.
NY 11530
or Whole Earth



Spin-Around (180-Degree Turn)

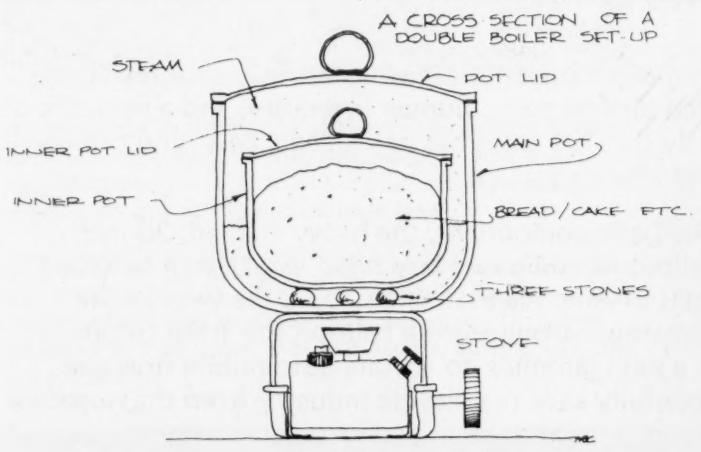
The spin-around, or 180-degree turn, is also known as the crash turn. The first part of this stroke is performed in the same manner as the dragging stop. That is, you must jam the pole down a few feet back of your poling position (on the left side if you wish to turn left and on the right side if you wish to turn right). With your upper hand you apply force against the pole, while at the same time you pull in with the lower hand toward your leg that is nearer the stern. You hold your upper body and legs stiffly, therefore transferring the force to your feet. Your foot that is closer to the bow forces the bow to swing toward the poling side while your other foot applies pressure in the opposite direction. If enough pressure has been applied, the canoe will continue to turn until you have turned it in the desired direction. That is, you can stop the canoe at 60, 90, 180, or 240 degrees, or you can make a complete 360-degree turn if you so desire.

The Healthy Trail Food Book

If you're not into eating shitfood and you can't afford freeze-dry (which to many also qualifies as shitfood) then you have a problem. What do you eat that fulfills your nutritional requirements and is also light, cheap, easy and fast to prepare, and economical of fuel and water? This comprehensive booklet gets you started towards feeding your face in a righteous manner by explaining the theory of adequate diet before presenting the menus and recipes (which I'll admit I haven't tried). The section of developing menus for extended trips is especially good, which is fortunate. Without experience such planning is most difficult. Moller's estimate of 2 lbs and about $2.00 a day per person seems realistic to me, as do the recipes. There are other books on this subject, but this one seems unusually easy to actually use.

—J. Baldwin

The Healthy Trail Food Book
Dorcas S. Miller
1976; 64 pp.
$3.00 postpaid
from:
Coastal Business Center
Wiscasset, ME 04578



Double Boiler: Baking with a Stove

When there is extra gas but no firewood, cakes can be baked on a gas stove by using the double boiler principle:

a. Put about 2/3 C water in the larger of two nesting pots.
b. Put the cake batter in the smaller pot, and slip it inside the larger one.
c. Put lids on both pots, place whole on stove.
d. Boiling water will steam heat and cook the cake. Make sure the pot does not boil dry.

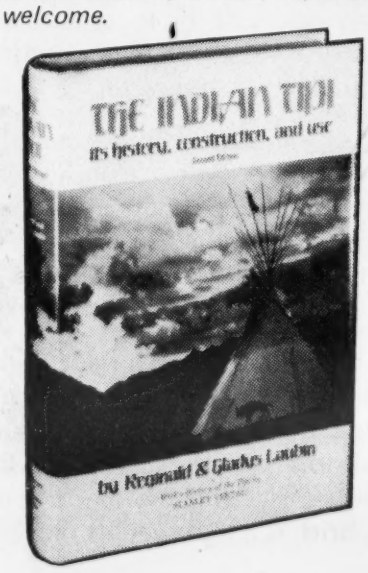
In any case, thin baked goods turn out better than thick breads and cakes, as there is less chance of underbaking.

The Indian Tipi

There's only one book on Indian tipis because no one's had a hope of rivalling it. Here's its new edition, revised, expanded from 208 pages to 350 and welcome.

—SB

Indian Tipi
(Its History, Construction, & Use)
Second Edition
Reginald & Gladys Laubin
1977; 350 pp.
$12.50 postpaid
from:
Univ. of Oklahoma Press
Sales Office
1005 Asp Ave.
Norman, OK 73019
or Whole Earth



Clunker Bikes

The Dirt Bicycle Comes of Age

BY RICHARD NILSEN

Photographs by Michael Castelli

In Marin County, California, a combination of recycled bicycle parts, human ingenuity, and a network of hilly dirt fire trails has produced a new kind of bicycle and a new sport.

The basic component, the heavy-framed, 26-inch balloon-tired "paper boy bike" has been a familiar sight in America ever since 1933, the year Ignatz Schwinn introduced the balloon tire from Germany as a sales gimmick to imitate automobile tires and hopefully save the bicycle industry from the nosedive it had been in since the advent of the motorcar.

Balloon-tired bicycles remained popular through the late 40's, when a medium-sized tire began to gain popularity. These gave way in the early 50's to English 3-speed bikes with smaller tires, and by the late 50's the move was on to the even smaller-tired, lightweight European racing bikes. Continuously improving roads made these changes both possible and practical.

So by the late 60's, the balloon-tired bicycle was clearly in the category of a forgotten relic waiting to be found. The finders, at least in Marin County, tended to be escapist hippies looking for the cheapest and easiest way to get to the local woods. They were cheap because in those days they could be found by scrounging at the local dump, and they were practical because they were so ugly no one would want to rip off your bicycle; ergo, forget locks, chains and paranoia.

They were and still are called by many names: junkers, clunkers, trashmobiles, bombers, ballooners, cruisers. The classic price for one around 1970 was $5.00. Gradually the term clunker began to prevail, and became a verb as well as a noun: "You want to go clunking today? We went on a good clunk yesterday."

A revolutionary moment in this history occurred three or four years ago, when Gary Fisher got the idea of putting a ten-speed derailleur assembly on a balloon-tired bicycle. (Gary, who is acknowledged in these parts as being the first person to create such a hybrid, is a lightweight bicycle road racer, who also happens to hold the record time on the local clunker downhill race course, the Repack.) It took some fiddling, of course, European dimensions vs. American, but when it was finished, the result was a bicycle that not only would roll down the hilly dirt trails, it could also be pedalled back up them. It could be ridden over deer and cow trails, and unlike dirt motorcycles, it could easily be carried over fallen logs and gullies. And it was quiet!

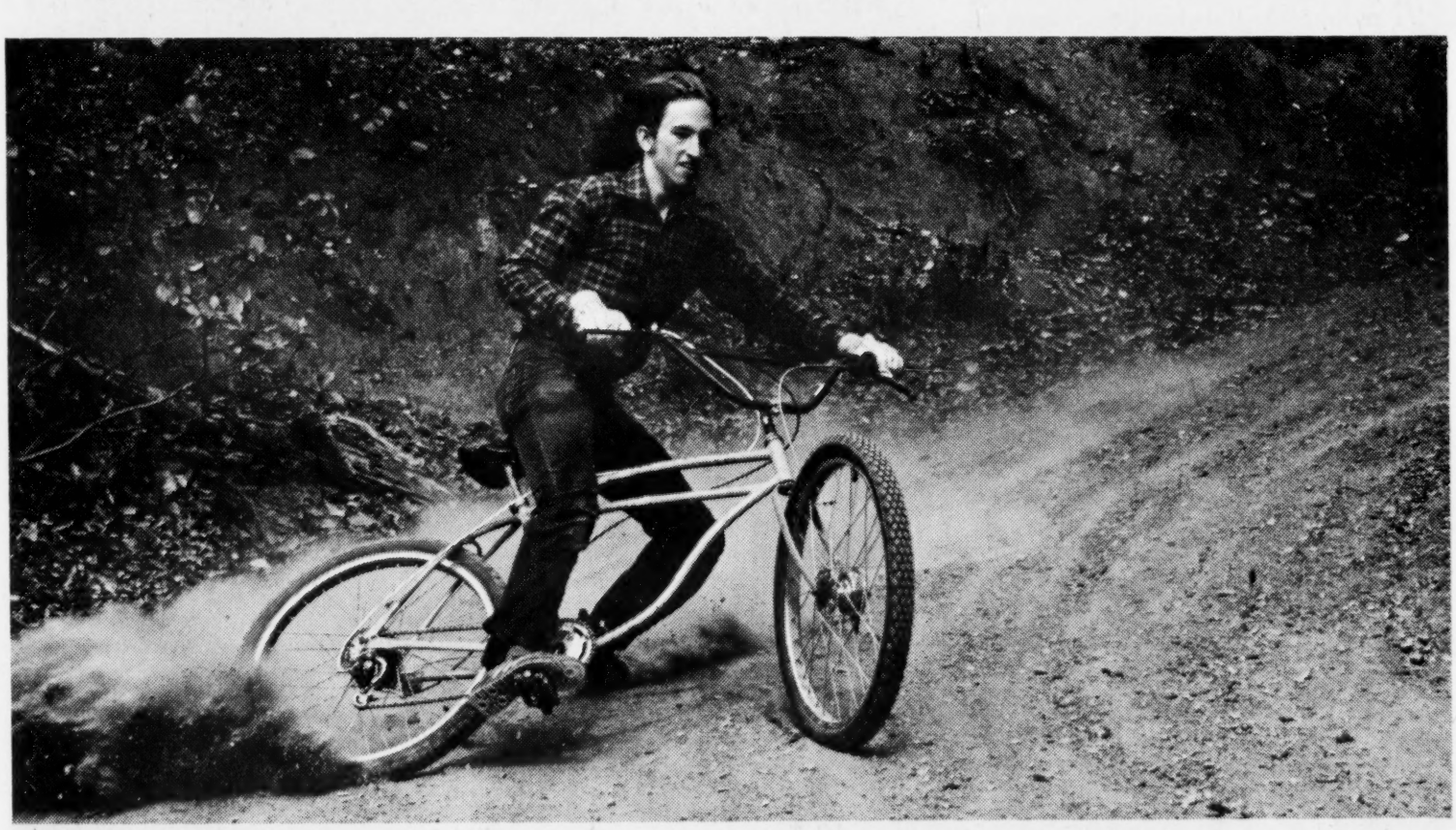
The potential of clunker bicycles has scarcely been explored. I have the distinct feeling that someone, somewhere else in the world must have hit upon this same combination of rugged frame, big tires and many gears. Perhaps the Chinese have millions of them. In Marin County today they are used primarily as suburban recreational vehicles, though a few owners are using them as a means of not having to own and maintain a car. But in forgotten rural America, where there are too few people to create much of a market for anything, clunker bicycles have a real future as everyday basic transportation. Anywhere that the roads are "too bad for bicycles," a clunker now offers an alternative.

As their popularity increased, the $5 clunker became the $25 clunker. In the trial and error of off-road use, virtually every part of the bicycle that could be broken was broken: seat posts, brakes, front forks, handlebars, gears, crank arms, rims. Subtle design changes and a desire for rugged replacement parts resulted. By now, bicycle shops and junk-yards in Northern California and a good part of Oregon have been scoured for old parts. With the bicycle industry today concentrating on lightweight racing bikes, and 20-inch banana-seat "motocross" bikes for little kids, new parts for clunkers just aren't made anymore; or if they are made, the quality is often inferior.

In 1965, Schwinn stopped making its heavyweight frames entirely, and the quality and workmanship on the older frames is far superior. A 40's Schwinn frame is therefore better than one from the 50's, and if you have one from the 30's, you now own a bicycle

DOWNHILL CITY Charlie Kelly demonstrates an urban application of his "cataclysm cruiser." "I call my bike that because anyone with a clunker who survives a major disaster will be mobile – even if little else is." The pedestrian who looks at this picture and says, "Cars and motorcycles are bad enough, but now this!" has a point. Though all of the riders pictured here are conscious of the impact they can have on hikers and pedestrians (Kelly uses his clunker primarily as a means of getting *away from* people on back country trails), the fact remains that in the hands of the wrong people these bicycles can become a menace, just like a rifle or a snowmobile. Clunker bike abuse currently centers around groups of high-school-age boys.

DOWNHILL COUNTRY Off the road a clunker bike is in its own element. Terrain that would destroy other bicycles becomes an enjoyable challenge. It is even possible to ride down, not just across, a dry creek bed on a clunker.



DOWNHILL AND DOWN A Repack racer just before he puts his bike down on one of the blind, off-camber turns the course is famous for. Successful technique here is extremely delicate; much closer to skiing than to motorcycle racing. On a motorcycle, acceleration is used to power out of skids like this. Here the rider, if he wants to stay on the track, must brake on entering the curve and then do a controlled skid around the turn. The bike is in a classic skid position, with the front wheel still pointing downhill into the fall line, and the rear wheel sliding sideways around it. Note the rider's uphill leg used as a support – hand-operated brakes, instead of the more conventional foot-powered coaster brakes, frees his leg to do this. Also notice the wide, reinforced handlebars, a stock part taken from a dirt motorcycle. The width here provides the racer with the leverage needed to hold the bike on the course at high speeds. On a narrow foot or deer trail, these wide handlebars tend to get snagged in the underbrush.

A TYPICAL CLUNKER bicycle in Marin County looks like this. The heavy-weight Schwinn frame came from a pile of old parts in the back of a bicycle shop and cost $10. The wide, motorcycle style handlebars have a reinforcing bar for extra strength. They are a stock item built for the 20-inch bicycle motocross (BMX) bikes used by smaller kids. The rider's hands don't have to leave the handlebars, since both the brake and gear shift levers are mounted by the hand grips.

The ten-speed, derailleur gears used here require free wheeling to shift gears; this makes it impossible to use the foot-operated coaster brakes this frame had originally. Instead, this clunker uses drum brakes front and rear, the same kind as on a car. The front brake hub is a Workman, the rear is an Adams. Drum brakes historically have been used only on tandem bicycles, and so they are extremely hard to find.

This clunker weighs 45 lbs., and sold recently for $130. The price is low end for a clunker with 10 speeds and drum brakes, but is comparable to the cheapest department store lightweight 10-speed available that would hold together. (The cheapest good quality lightweight racing bikes now cost around $700.) One bike builder in Marin County has sold a dozen rebuilt clunkers in the past year in the $325 price range. Due to the local demand, a dealer in the area now offers a modified 26-inch Schwinn balloon-tired bike for $245. For that you get all new parts that include drum brakes front and rear, ten-speed gears, and a modern (less durable) Schwinn frame.

A straight stretch mid-way on the Repack downhill race course. The track is a two-mile long dirt fire trail with a vertical drop of 1,200 feet. When the riders passed the camera they were doing close to 35 mph. In an actual race the contestants are separated to avoid collisions; a timer at the top starts one racer every two minutes. The environmental impact from the bikes on the trail is a continuous one-inch deep groove the width of a bicycle tire, which traces the fall line of the track, and some loose dirt on the curves. On a race day, contestants begin by walking up the course to clear it of rocks.

worth locking up. Other makes of sought after old frames include Shelbys and Columbias.

With these changes, some of the early pioneers began to call their creations by other names. "To refer to a $300 bicycle as a 'clunker' is a contradiction in terms," says Joe Breeze, who calls his radically designed, homemade bicycle a ballooner.

Popularity has also brought abuses. Clunker bicycles on narrow dirt trails are not particularly compatible with either hikers or horses. Many clunker bikers don't ride on weekends just for this reason, or else choose trails where they are less likely to encounter people. But how to explain these fine points of user responsibility to a group of 16-year-old clunker enthusiasts is an unanswered question. Andrea Sharp, the **CQ** office manager, has had to leap off of hiking trails in Marin to escape an oncoming pack of clunker riders. She says they are *worse* than dirt motorcycles, because they give you no warning of their approach.

The advantages of a clunker on dirt become disadvantages on pavement. The heavy frame is that much more mass to move, and the big balloon tires have a

Joe Breeze, a local lightweight ten-speed racer, designed and built this bicycle, which he calls his "ballooner." It embodies the current STATE-OF-THE-ART in clunker design. Modelled after a Schwinn Excelsior X, the curving Schwinn frame has been reduced to a cluster of straight-sided triangles.

The frame is of 1-1/8 inch diameter "4130" chromium-moly steel tubing, brazed with low temperature bronze solder. This tubing is nearly twice as strong, and weighs much less than the 1-inch diameter mild steel used in the old Schwinn frames. The longest diagonal tube is actually two tubes, one to each side of the rear hub. These 5/8-inch twin laterals are an important design feature, since they prevent both lateral and torsional flexing of the frame, which under racing conditions can be severe.

Broken seat posts have been a recurrent problem during races. The post here is stronger because of the larger diameter tubing, and because the frame design shortens the length of the post. The quick-release seat post clamp used is no longer available, not because it is old, but because the U.S. Consumer Products Safety Commission considers the protrusion lever hazardous. Joe Breeze is irate about this form of governmental interference. "For example," he says, "Campagnolo, by far the most respected Italian parts manufacturer, has been forced to modify many of its designs to meet with CPSC approval." The seat is a Brooks B-72, extra wide for support on bumps, and "the only genuine leather seat available in its size."

The front forks of the frame are reinforced by a slender pair of fork braces. Chrome-moly motorcycle handlebars hold thumb shifters for the gears, and motorcycle brake levers. Rim brakes were chosen over drum brakes because they weigh about 4 lbs. less. They will not work as well in wet weather, but they are a cantilever design, and are brazed to the frame.

The sealed bearing bottom bracket is of European diameter, and is custom made in California. Sealed bearing hubs are also used. The crank arm, pedals and derailleur transmission assembly are all stock items taken from ten speed road bikes.

The Schwinn mild steel 22-inch rims are rolled and stamped, and are of poor quality – it's hard to find a pair that are true. They are all that is available for balloon tires, though, until somebody starts manufacturing a superior cast aluminum alloy rim. Likewise the tires: manufactured by Carlyle Rubber and Tire, these 2.125 knobbys come in only one pattern for a 26-inch wheel. Breeze would prefer a tread with the knobs extending further around the sides of the tire for added traction. Spokes are 14 gauge.

Through careful selection of parts and materials, Breeze has kept the weight of this bicycle to 38 lbs., which compares favorably to the typical 45 - 50 lb. clunker. He estimates a production version of this bike would run $650 - $700, putting it in the same price class with European lightweight racing bicycles.

high rolling resistance. Those looking for a bicycle to use both on and off the pavement should consider an intermediate weight frame and a tire such as the 1.75 inch diameter size – smaller than a balloon tire, but larger than a racing tire.

Clunker bicycle racing is the third, and certainly the least-known about, kind of off-road bicycle racing. The oldest is European cyclo-cross racing. The bicycle here is a very refined, lightweight knobby-tired ten speed, the track length varies from 3/4 to 1-1/2 miles in length, with enough laps to make a 15 - 20 mile long race, that usually takes about an hour to run. From 30 to 40 racers compete together. The catch is that there are as many as ten mounts and dismounts for obstacles in each lap – logs, gullies and mudholes. The trick is in being able to leap the obstacles on your bike, or else to dismount, run through the obstacle and remount, all without breaking stride. Needless to say, this sport requires great physical stamina.

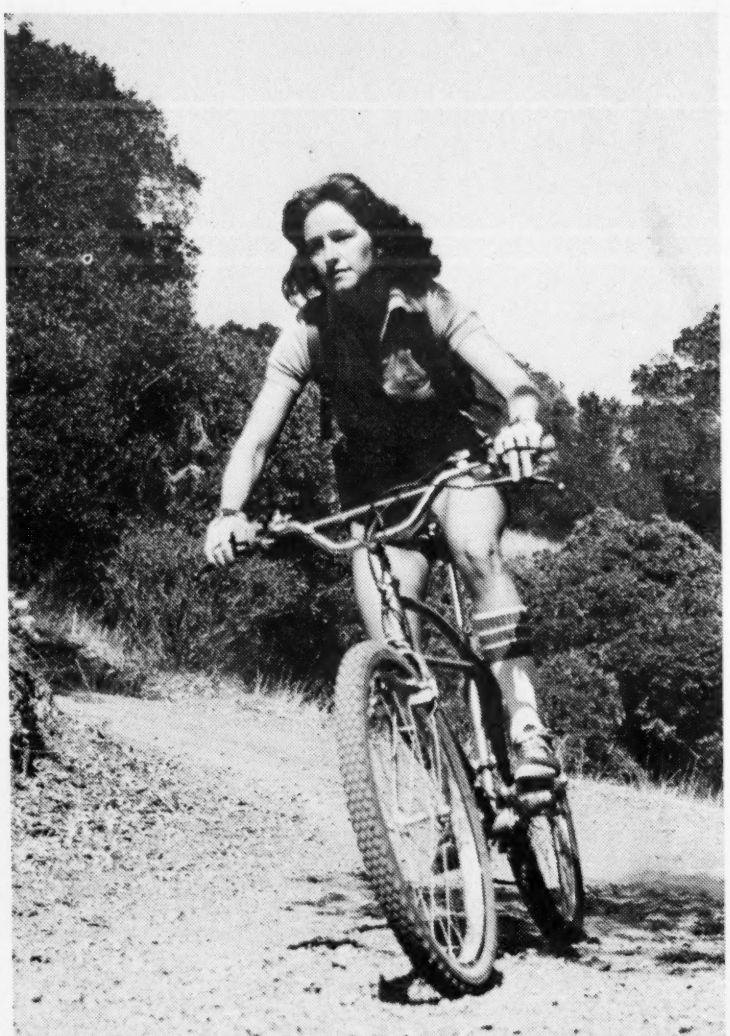
The second and more recent off-road sport is called bicycle motocross, or BMX. Described as the largest two-wheeled sport in America, it is for kids too young to have licenses to ride motorcycles. It is largely supported by the motorcycle manufacturers as a not-too-subtle means of instilling product identification

in the minds of its future customers. Racers ride 20-inch, one-speed MXers in heats of 5 or 6 over quarter- to half-mile manicured dirt tracks with jumps interspersed. The courses are very gentle, and no body training is required. These small 20-inch MX style bicycles can be seen lining the walls of any bike shop in America today.

Clunker bike racing as it is practiced in Marin County, is a downhill event, with each racer taking his or her turn against the clock – much like a downhill ski race. Other variations exist elsewhere (see box). The dirt course is two miles long and drops 1,200 feet. It is a fire road with numerous blind, off-camber hairpin turns. The best times have been turned in after rains, when the course is less dusty and better packed. Gary Fisher's track record of 4:22.14 was set in December of 1976. Any time under five minutes is considered good, since that time requires an *average* speed over the track in excess of 25 mph. Which means that if you are not braking and skidding through one of the turns, you have to be pedalling downhill like crazy.

The racers have the course memorized by heart, and with 100 foot maximum visibility and 200 foot stopping distances, it's easy to see why. "The Repack course kind of comes on like a recurring dream," says race organizer Charlie Kelly (he owns the synchronous timers). The course got its name from the old coaster brakes, which used to come smoking across the finish line and would have to be repacked with grease.

Clunkers are clearly capable of providing enough off-road versatility and thrills to entice a few dirt motorcycle riders to give up straddling a mechanical vibration and find out instead what warm leg muscles feel like. But since clunking does involve perspiration, the American male's love affair/addiction to the internal combustion engine – insofar as dirt motorcycles are concerned – will probably remain good to the very last drop of oil. ■



When this woman races in the Repack, she wears the gloves shown here, plus a long-sleeved shirt and pants. Almost none of the racers uses a helmet, though many wear knee and elbow pads. On this day, she was out taking pictures. For wildlife photography especially, clunkers are an ideal form of off-road transport, because they are quiet.

CLUNKER BIKE RACES

California

The Repack Downhill Clunker Race takes place about once a month, weather permitting, usually on Sunday mornings. Currently from 10 to 20 racers compete on the mountainside course just outside of Fairfax, California, a small town about 20 miles north of San Francisco. Race dates are announced by telephoning previous competitors. Newcomers and racers from outside Marin County are encouraged to compete. Contact Alan Bonds or Charlie Kelly at 32 Humbolt St., San Anselmo, CA 94960. Telephone (415) 454-4359.

Colorado

Clunker biking in Colorado is centered in the small mountain resort town of Crested Butte, high in the Rocky Mountains south of Aspen. Balloon-tired bicycles are popular because there aren't many paved roads in town. There isn't even much dirt, but there are plenty of rocks. The technology is not as advanced as in California; single-gear, coaster-brake balloon-tired 26-inch Schwinns are what most all clunker bikers use here.

With last winter's drought and no snow, things began to pale in this ski town, and so some bike races helped to alleviate the boredom. There was a beer slalom through the back alleys of town, with beer stops en route. There were sprints down the main street, and a distance jumping contest on pavement off a 2-foot high ramp. The record was 27 feet.

But the main event each year is the Crested Butte-Aspen-Pearl Pass Clunker Bike Race. This 40-mile, two-day overnight race leaves Crested Butte, climbs over 12,700-foot Pearl Pass, and descends into Aspen. The downhill thrills are earned after pushing your bike up much of a trail that follows a stream bed and crosses interminable scree slopes. Out-of-town contestants are most welcome, and heavy duty spokes and rims and a helmet are recommended.

The race takes place in early September. The first one was held in 1976. Last year's race had to be cancelled, ironically, due to the drought. Many of the racers belong to the local fire crew, and were out of town fighting forest fires during the month. Plans continue, however, for a race this year. For information, contact The Grubstake Saloon, Box 229, Crested Butte, CO 81224.

Alaska Blues

Carlyle said: "The tragedy of life is not what men suffer, it's what they miss." Occasionally a journal of a stranger's intensely lived work season is so immediate that the reader is left with an aching, a longing to pack up everything and be off after the writer. **Alaska Blues** *is this immense a treat. But more. Packed with excellent photograph after excellent photograph, it chronicles an April to November on the inland waterway from Seattle to Skagway. Throughout 228 carefully laid out pages, Joe Upton's journal is beautifully written, an extraordinary work of love; a marvelous mating of time, place, mood and lore.*

Specifically his subject is salmon trolling, with lesser attention paid to gill netting, long lining and market doings. As the central issue is conservation, his conclusions are somewhat grim. But Upton most entertainingly weaves a history of the industry and some of its more colorful practitioners into an account of a working tour along a thousand miles of our last wilderness.

Commercial fishing is not leisurely craft. Body bulk helps, also muscle, a truculent streak, a romantic whim of heart and a strong sense of self-competition. This is not easy to write about — being a primitive thing, unsocial, private and seemingly dull. It takes at least seven years to become a good salmon troller. Some claim there is art in fashioning and maintaining one's luck. If so, this has escaped me. But then I may have never sensed sufficiently the fine tunings of its very high craft. I played — respectfully — for two seasons only. Oddly enough, commercial fishing was the closest thing to writing a novel that I have discovered away from a typewriter. And so Joe Upton's passage amongst hundreds of bays, inlets and channels of this dying inland fishery is both a most successful book and a perfect metaphor for the process of writing one.

> The day came with light airs and only a left-over swell, so we were off at 8, the strait empty except for a big packer on the far shore. Another front came through just as we were at Point League, and we spent an hour I'd like not to repeat. The first gust was a solid 40 knots, blowing off the tops of the waves, and it came right at the tide change . . . On the beach, the seas threw solid spray up into the trees . . . It took an hour to make barely a mile. Susanna was right there beside me, saying little . . . It was one of those times when you just get caught and there's little to do but keep going. On the beach outside the harbor lay a fine 40 foot gillnetter, her bottom stove in, driven ashore in last week's blow.

An achievement like **Alaska Blues** *is a masterpiece of its genre. Upton's description is exquisitely controlled, his writing always most caring, with moods such as:*

> What gloomy canyons they seemed today, with the clouds pressing down . . . and the rain beating in heavy slants on our world of dark green hills and lead-gray water . . .

coming dozens, hundreds of times. Our eyes and ears have so long been assaulted with the hyped and trumped-up fluffery of new journalism and our egocrazed pop novelists that Upton's daily account of his campaign in this great fishery seeps into one's mind like the comforting embrace of some long lost sanity. Here is a book which tells you everything you never realized you wanted to know about fishing. Work, play, danger, courage, loyalty and daily decent fortitude.

This is not an antique form dressed new. **Alaska Blues** *transcends. This book should be translated into every language fishermen and fisherwomen speak and placed in every library of the world. Joe Upton's journal does justice to its setting, one of the most awesome wilderness frontiers. And yet, most cunningly, he describes the detail of domestic work-a-day life until you want to sing along with him, his wife Susanna, their dog, their friends. These are seemingly rare lived lives, but so artfully described that never does it seem beyond our individual means to mimic them.*

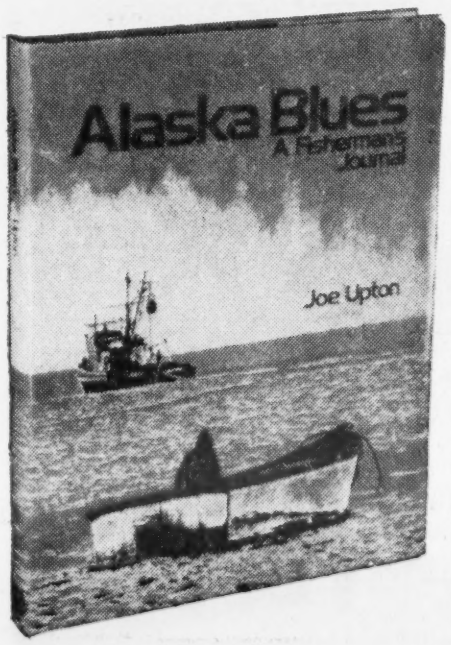
The most cautious remark I could make about **Alaska Blues** *is that it is a writer's book. And I hope Upton will forgive me.*

But 'tis true. What he has done with the Gordian knot of the first person singular is perfect discipline. This is a moral book, and finally, of course, a political book. Whatever you have wanted to understand about the dilemma of southeastern Alaska you will find among its pages. Upton's tale will enrich children, politicians, the elderly, the ambitious and those of too-little-faith. Most of all, this is a book for lovers.

And that, at last, is its perfect flaw. I want more. Who is Susanna? What might her book be? And the friends? Or — and also — the folks who are always on our beaches: relatives, teachers, enemies, gurus, the debted, the indebted? And what of Upton's library? What does this roughnecked gentleman read?

The Alaska Northwest Publishing Company has done us a great service. **Alaska Blues** *has come late to me, perhaps everyone else has read it now. No matter. I shall circulate it amongst my fisherman friends, recommend it to every politico I encounter, send it off to my ancient Republican Auntie in Florida and order a fresh copy for my children.*

— David Shetzline



Alaska Blues
Joe Upton
1977; 236 pp.
$15.45 postpaid
from:
Alaska Northwest
Pub. Co.
Box 4-EEE
Anchorage, AK 99509
or Whole Earth

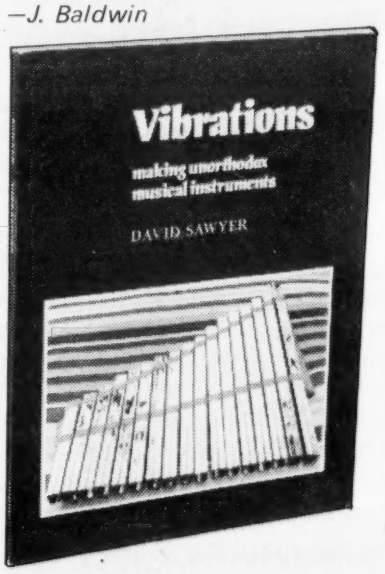
Communications

Vibrations

No, no, it's not, like, good vibes, man. It's how to make your own musical instruments, and it's good too. Ceramic flutes, bamboo flutes, tin can fiddles — some traditional and some downright weirdo noisemakers are presented with clear instructions, sharp drawings, and lots of encouragement. Exceptionally nifty: a nice gift for someone you like.

—J. Baldwin

Vibrations
(Making Unorthodox Musical Instruments)
David Sawyer
1977; 102 pp.
$7.95 postpaid
from:
Cambridge University Press
510 North Ave.
New Rochelle, NY 10801
or Whole Earth



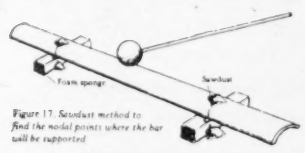


Figure 17. Sawdust method to find the nodal points where the bar will be supported

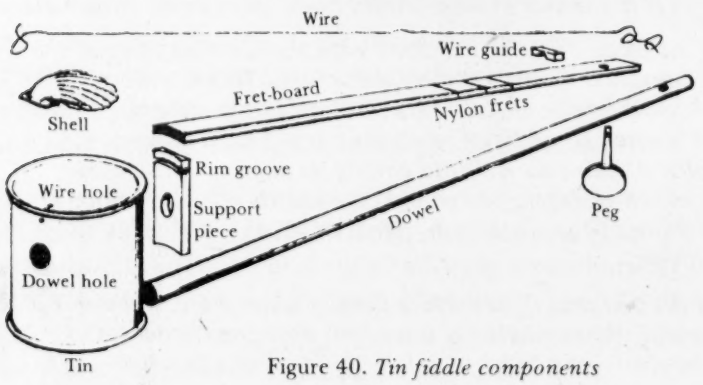


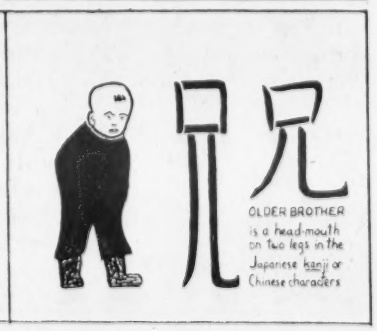
Figure 40. *Tin fiddle components*

The Kanji ABC

Spoken languages vary considerably in the Far East, but in written form they are all basically the same — kanji — for one billion people, about one-fourth of the world's population. Approaching the system conceptually through its apparent visual-image origins, the book is effective introduction.

—SB

The Kanji ABC
Andrew Dykstra
1975, 1977; 186 pp.
$6.95 postpaid
from:
William Kaufmann, Inc.
One First St.
Los Altos, CA 94022
or Whole Earth



The David Grisman Quintet

Bluegrass meets jazz and transcends both. Renowned musicians, dazzling technique, inventive music of great good cheer.

—SB
[Suggested by Margaret MacLean]

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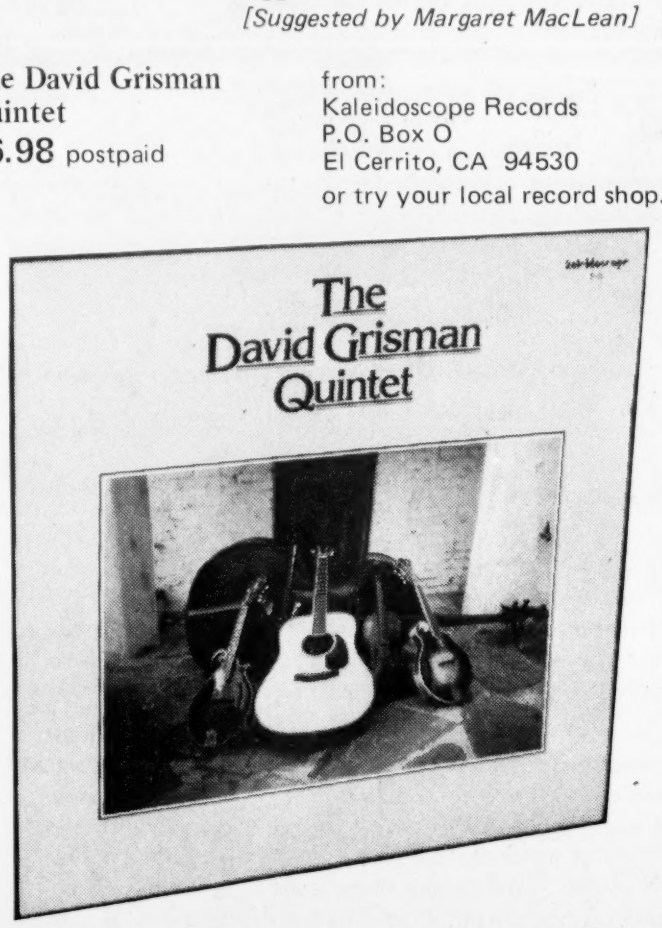
El Cerrito, CA 94530
or try your local record shop.



Maledicta

An angry magazine about cursing. Reinhold Aman, its editor, is making a good scholarly journal about cursing around the world and through the ages — with many examples and no asterisks. At the same time he is using his magazine to hurl foul imprecations at other scholarly magazines and cacademia (as he calls it) in general. Interesting, disconcerting reading and a good way to learn new curses and think about the old ones.

—Anne Herbert

Maledicta
(The International Journal of Verbal Aggression)
Reinhold Aman, Ed.
$10/yr (3 - 4 issues)
from:
Maledicta Press
331 S. Greenfield Ave.
Waukesha, WI 53186

Moral calibre is considered always in terms of high and low. Low is bad, "feminine," raped, and on the way to Hell. High is on the way to Heaven, and masculine: *top banana* in the pederastic pecking-order of men-among-men. A man of low moral calibre is *lower than the spots on a snake's ass.* He's *so low he can kiss a tumblebug's gilliewinkie without bending his knees,* or can *look up a snake's asshole and think it's the North Star.* All the images here over-define the lack of status and idealism in the person described. At the bottom of the heap is the individual who is *lower than whale-shit — and that's on the bottom of the ocean.*

New York Rocker

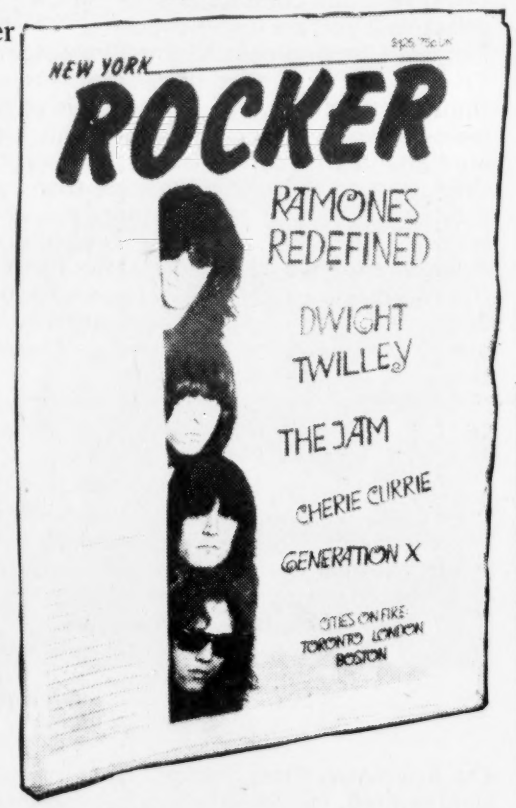
I used to have the sneaking suspicion that the decline of Rock coincided with the ascent of Rock journalism. When the intellectualizing arrived, it brought with it a self-consciousness which seemed antithetical to the musical expression of teenage gland problems. By now Rolling Stone*'s 4-color paunchiness fits most of the music it chronicles.*

The resurgence of raw Rock, however, requires raw data and the New York Rocker *provides it plentifully. Utilizing interviews and local reports, the* Rocker *covers new Rock in N.Y., S.F., Toronto, Detroit, L.A., Britain, and most points in between (Akron!). Ads and overblown analysis are thankfully kept to a minimum.*

Punk rock may be a flash in the cultural pan, but creative artists like Talking Heads, DEVO or Patti Smith transcend fad labels. The Rocker *helps tell the pearls from the swine.*

— Jay Kinney

New York Rocker
$7.00 /6 issues
from:
New York Rocker
P.O. Box 253
Elmhurst—A
New York, 11373



After Hell's encore, as the lights came back on, I sat and wondered why I'd liked him so much more than I'd expected. I hadn't changed my mind about him, really; but what happened didn't have much to do with mind. It had a lot more to do with the fact that the real meaning of rock n' roll is often very different from its verbal message; honesty, and belief, and simple force count for a lot more than mere technical ability or lyrical invention — which is why "Anarchy in the U.K." is one of the happiest songs I know, and "Blitzkrieg Bop" one of the most moral. When Susan Springfield sings that she doesn't love anyone, she still loves rock n' roll, and that's what she really communicates to her audience; no matter how bitter and negative Hell's lyrics may get, the beat is always there to offer an escape. And even the dullest little pseudo-punk, cut off by his own self-image from all ideas, or emotions, or anything more complicated than a razor blade, can still understand that message, and put it to use. That has its own value. I stood up and went out with the last of the crowd. It had gotten a lot colder; I zipped up my jacket and tightened the scarf around my neck. Outside the door, I saw the girl I'd been talking to climb into a taxi. As she drove away, I realized that I didn't know her name.

I started walking down the Bowery. A bum was kneeling in front of an open fire hydrant on Houston, splashing water on his face. He didn't notice me. I turned down my street. As I walked, I heard a strained, harsh voice calling over and over again, "please . . . please . . . please . . . *please* . . ." It was a middle-aged man in a red sports jacket, coming down the other side of the street in the opposite direction. When we were just parallel to each other, he stopped and screamed out: "ANYBODY!" I thought he hadn't seen me, but suddenly, just as I reached my building, he did. He looked at me. I looked at him. Then I turned and went inside.

Tom Carson

Calculators/Computers Magazine

Since our survey of the hobbyist magazines in the Fall '77 CQ *was compiled* Calculators/Computers Magazine *began publication. It is primarily oriented towards the educational and recreational uses of personal computers, with a high proportion of games and self-teaching materials. Many of the pages are marked specially to indicate that they may be copied for classroom or other non-commercial uses. Personal computer users with interest in educational or recreational applications should find this a useful resource.*

— Marc Le Brun

Calculators/Computers Magazine
$12 /year (7 issues)
from:
DYMAX
P.O. Box 310
Menlo Park, CA 94025

It's often possible for students to figure out what procedures the *computer* has to follow to play *its* part of the exercise. Except in the case of complex simulations, the next step is for some *students* to take part of the computer and to run the exercise without the machine.

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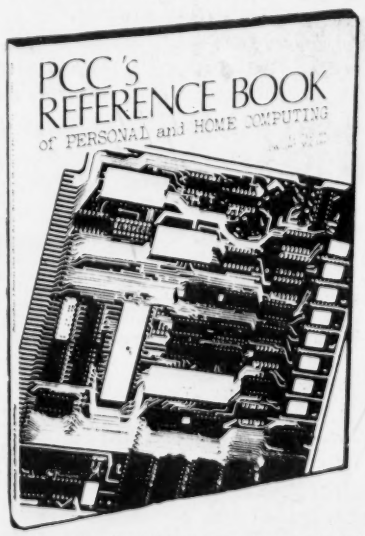
It is very important that students learn that a result is not necessarily correct just because it appears on the display.

PCC's Reference Book of Personal and Home Computing

This book is well described by its title — it is a reference book pure and simple. That is not to say that it is all dry facts, the first half or so consists of tutorials and articles of general interest about various aspects of personal computing. Then comes the more particular data — bibliographies and indices, lists of stores, clubs and professional societies. All this topped off with a dollop of advertisements, just to round out the presentation. Organizations are given with complete name, address and telephone, publications with Whole Earth style access info and articles are cited in the usual format. Given the diversity of sources of this information having it all in one place makes for a useful tool.

— Marc Le Brun

PCC's Reference Book of Personal and Home Computing
Dwight McCabe, Ed.
1977; 248 pp.
$6.90 postpaid
from:
People's Computer Company
P.O. Box E
Menlo Park, CA 94025
or Whole Earth



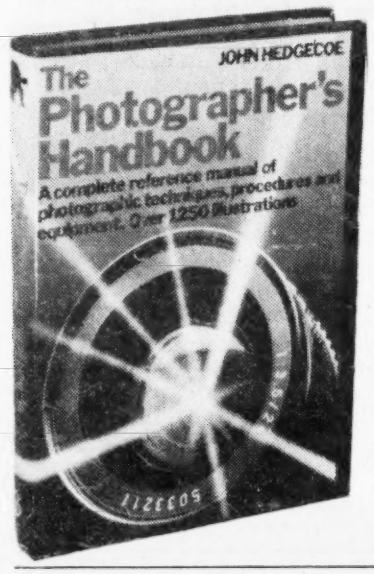
You won't believe this, but almost *all* of the billion brands of computers around work just fine, are reliable and trustworthy. There's hardly a bad egg in a dozen. And I tell you this, that a supposedly faster computer with rotten software will get less work done than a technically slower one with good software. Of course a fast computer with good software is a blessing if you need the speed and aren't behind in your car payments. (You, over there with the bicycle, you're lucky.) Speed and fancy boxes cost money. Get a simple box. Get good software. Get good advice. Be happy. You can always paint the box to harmonize with the drapes, or give it racing stripes.

The Photographer's Handbook

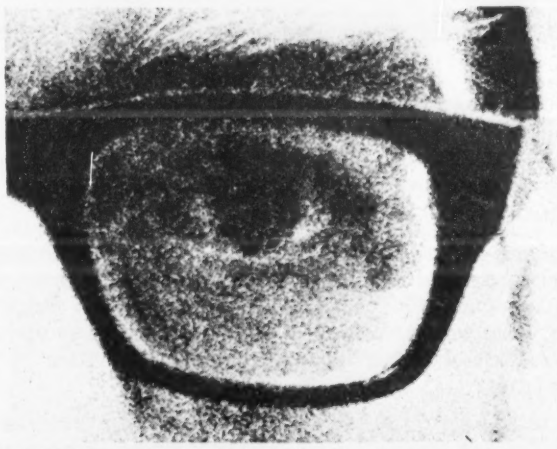
I was a photogger before I was a catalogger, and long I've deplored the dearth of practical/comprehensive books on photography. You either had excellent but highly specialized items like Minor White's Zone System Manual *or the absurdly overpriced and overproduced Time-Life series of photography books.*

The one book I long relied on, Feininger's Total Picture Control, *has now been surpassed by this beautiful new book. It's quite wonderful to use, rewarding the browser as well as the photographer who has a special problem. I went to sleep on the subject of photography years ago. This book makes me think about waking up and trying some of its myriad ideas and techniques. With* The Photographer's Handbook *and* The Photography Catalog *(Winter '76/'77 CQ) you need no other books.*

—SB



The Photographer's Handbook
John Hedgecoe
1977; 352 pp.
$16.95 postpaid
from:
Alfred A. Knopf, Inc.
455 Hahn Road.
Westminster, MD 21157
or Whole Earth



Uprating film

One way to help solve the exposure problems when shooting under very dim conditions is to "uprate" the film, so that effectively you are under-exposing. The film is then given increased development. Some films, especially fast film like Tri-X and HP5, respond better to this treatment than slower films, although uprating tends to give all films an exaggerated grain pattern and increased image contrast. Subjects which are flatly lit with soft, diffused illumination therefore lend themselves to this technique more than contrasty, harshly lit subjects. The latter often produce excessively hard negatives which are impossible to print. The picture, right, is a X10 enlargement from part of a negative made on recording film (normal rating 1250 ASA) uprated to 3000 ASA and given 30 percent additional development time. Most fast and ultra-fast films can be "pushed" to between three and four times their normal ratings.

The Pushcart Prize and The Small Press Review

Printing good (and bad) writing is easy and cheap these days, but getting it to where people can buy it is still complicated and expensive. That hurts small, worthy presses, and it also hurts you since you're missing a lot, no matter how many bookstores you go to.

Here are two ways to miss less of what's being published by groups smaller than Time, Inc. and Mother Jones. **The Pushcart Prize** *is a collection of good writing nominated annually from hundreds of small press publications. Strange good things by people you wouldn't otherwise see. And it lists where the pieces were originally published so you can use it as a guide to small magazines you might be interested in.* **The Small Press Review** *has brief reviews of books from a number of small presses. A subscription includes membership in the Small Press Book Club (with no obligation to buy.) The book club makes monthly selections of books and offers interesting sampler packets of magazines.*

—Anne Herbert

The Pushcart Prize
(Best of the Small Presses)
Bill Henderson, Ed.
1976; 437 pp.

The Pushcart Prize II
(Best of the Small Presses)
Bill Henderson, Ed.
1977; 527 pp.
$5.95 each postpaid
from:
Avon Books
250 West 55th St.
Order Dept.
6th Floor
New York, NY 10019
or Whole Earth

The Small Press Review
$13.50 postpaid
from:
The Small Press Review
P.O. Box 100
Paradise, CA 95969

you will be rich and telephone me long-distance, I will be rich and wire you one thousand roses. We will order the chamber orchestra back to their room and get tubas, trumpets, kettle drums, harps, tall golden harps played by maidens with silvery wings. We will skate on the ice, our coats spread like broad sails to the dawn.

—Mary Lane
"How It Will Be"
The Pushcart Prize II

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The Alternative Press, Packet, 12 or more individual items, hand printed, including broadsides, postcards, bookmarks, packaged in a 6x9 envelope, $3.50.

A mailing from The Alternative Press is the kind of event that makes it worthwhile getting your mail – even if everything else is a bill, or addressed to "occupant." The envelope contains handmade photo collages, original drawings, paintings, calligraphy, sketches, poems, epigrams, sometimes even wrought metal, presented as postcards, as broadsides, as bookmarks, as *objets*.

Calamity Jane's Letters to Her Daughter, Jane Canary Hickock, Shameless Hussy Press, 1976, 4 x 7, unpaged, paperback, perfectbound, $1.95. Reprint.

A little gem of a book, **Calamity Jane's Letters To Her Daughter** contains over 20 letters written by the woman we (and the Indians) knew as Calamity Jane, saved in an album intended by Jane for her daughter by Wild Bill Hickock. This infant daughter had been given to a well-to-do Eastern couple, and Jane wrote to her over a span of years from 1877 to the last entry, 1902, and from places like Deadwood, Stringtown, New York City, Richmond, and sometimes simply from "campfires" in unidentified country. The letters were not sent, but were intended by Jane to be delivered on her death through the agent of the man who adopted the child, Jim O'Neill. These are the letters of a woman whose schooling ended in the third grade and who used a dictionary as she wrote, so that she would appear literate to her child. They record for the absent and unknowing daughter a chapter of American history, from run-ins with the local ladies to encounters with the Indians, and even a visit to the O'Neills to see Jean Irene, a trip financed with the winnings from a poker game.

– Small Press Book Club

Hidden Ground

WE HAVE A NEW FEAR
THAT THE WRONG FOLKS
WILL LEARN THE RIGHT QUESTIONS

THUS PLACING NEW BUGABOOS
UNDER THE BED

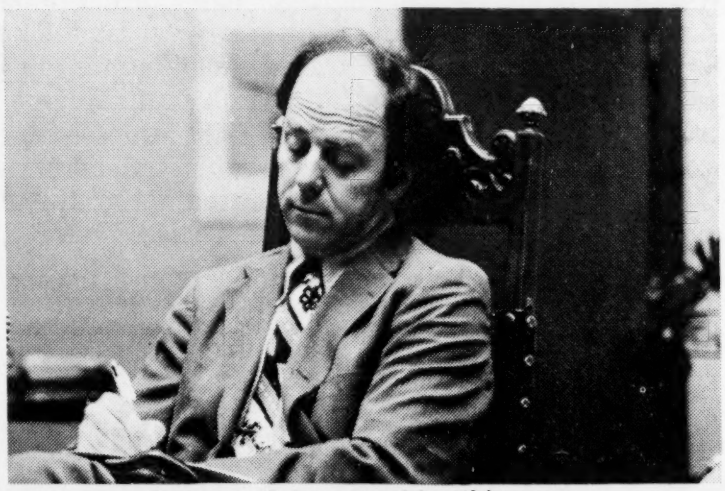
AH BUT

A WHOLE NEW INDUSTRY IS BORN
REINFORCED PSYCHIC RESEARCH
SEEKING OUT/WHAT LOOKS IN

AT THE SPEED OF LIGHT

OR CHECKING OUT ARTS' PROJECTION
AS WE FLIRT WITH

THE FLIP-OUT —*Huey Johnson*
OF INFINITE NIGHT *Secretary of Resources Agency*
(A summary written while listening to Marshall McLuhan in Governor Brown's Office)



Brand

Secretary Johnson writing this poem.

TV in Russia

. . . It is somewhat amusing that the main object of looting seems to be TVs.

Moving over to another culture, I quote from New World Review, 11.12.77:

"One of the new problems the (Soviet) peoples' culture faced in the sixties was, paradoxically, the technology of the post war era. Television which at first seemed such a boon to the propagandist, was found to have the effect of drawing people out of the orbit of social activity. The consumerism that was becoming increasingly possible as prosperity increased also tended to wean people away from the former, more austere social interests: the public lecture hall, the reading room, training for sports, etc. As a survey showed . . . more workers were watching sports than taking part. New life styles were emerging and art had to adapt itself . . . A young generation that had known none of the rigors of the early years was eager for fresh approaches. 'Y. Furtseva then Minister of Culture urged the TV studios to give more time to amateur dance groups and singers to all sorts of contests and games . . . Programs were devised that would be likely to stimulate more active participation in the arts and public life.' All this had its effect. The ever popular guitar acquired a new status and in the hands of such exponents as poet and novelist Bulat Okudzhava and actor Vysotsky, almost a new social role. Certainly they have hundreds of imitators among workers and students, etc."

I am seventy-two, a retired contractor and carpenter, self-educated and have been in the communist movement since the early thirties.

With warm regards.

William J. Corr
Seattle, Washington

Gorilla

In our house Gorilla *got a tie vote with "Close Encounters of the Third Kind," Spring bulbs, and new babies. They all remind us of how little we really know about the world around us, and instead just inspire delight and amazement.* Gorilla *is an 8-page biannual publication with stories about a 120 pound female Bay Area gorilla named Koko, purchased last year with donations and the efforts of many (and even a court case) that saved her from a grey institutionalized life in the San Francisco Zoo, and allowed her instead to learn to talk with sign language while living in a converted trailer on the Stanford campus. She now has a 4-1/2 year old gorilla friend Michael who lives with her and is also learning to "talk."* Gorilla *is sent to contributors who help support the Gorilla Foundation, 700 Middle Avenue, Menlo Park, CA 94025, which devotes their time to Koko and Michael. Nice amounts to contribute: $10, $25, $50, $100, $500 or $1,000. Koko knows 540 words and clearly many other things we would hardly imagine she might know.*

—Virginia Baker

Gorilla
from:
Gorilla Foundation
700 Middle Avenue
Menlo Park, CA 94025

Koko and Francine Patterson.

"One afternoon Koko and I were sitting together and Koko was playing with a white towel.
Koko: That red (pointing to the towel).
Barbara: You know better Koko, what color is it?
K: That red.
B: Wrong, that's white.
K: red Red RED (with increasing emphasis).
B: Oh come on, Koko, it's white.
With that, Koko picked an almost microscopic piece of lint off the towel, held it out to me on the end of her finger and signed,
K: Red.
It was. I made a suitable apology.

Koko's apparent prevarications usually take place under interrogation at the scene of the crime, immediately following the misbehavior. However, Koko will often respond to questions about such incidents long after their occurrence . . . For example, the day after Koko bit a companion, I asked her, "What did you do yesterday?" She replied, "Wrong, wrong." "What wrong?" I queried. "Bite." The following conversation took place 3 days after the event discussed:
Koko: Bite.
P: You admit it? (Previously Koko had referred to the bite as a scratch.)
K: Sorry bite scratch. (P shows Koko the mark on her hand — it really does resemble a scratch.)
K: Wrong bite.
P: Why bite?
K: Because mad.
P: Why mad?
K: Don't know.

TV comments

Neither my parents nor myself have ever owned a television. The following conversation has taken place off and on many times over the last 20-odd years:
Outsider: Did you see XYZ on TV last night?
Myself (or presumably other member of our family): No, we don't have TV.
Outsider: You're so lucky. . . .

True Animal/TV Story

The big white cat jumps up on the table,
He tucks his paws under him and settles down to watch TV.
This is the only programme he cares to view:
Its name? "The Ascent of Man."

E.E. Cran
Montreal, Quebec

ON STORY TELLING

BY CAROL SCOTT VAN STRUM

The evolution of language as an instrument of play and amusement probably occurred parallel to (or even preceded) its evolution as a practical tool. There is no question, at any rate, that story-telling is an ancient art, and that like most play it serves a vital – if often unrecognized – function, for the values and underlying principles of any culture have always been most effectively carried from one generation to the next via the medium of its stories, myths and legends. Unless you have experienced it yourself, it is easy to forget what a powerful medium story-telling is. We have a friend who is a story-teller. His visits are always occasions for feasting and excitement, the kids wondering the while if there will be a story this time, and reveling in the suspense. Finally, after dishes and kids are washed, milking done, animals fed, he will settle into a chair, take off his boots, look around at the expectant faces, and reward us with his latest "yarn." Children, grown-ups and even dogs listen and are still. Giants, parrots, princesses, rag-pickers and mice come to life; wild music, unexpected rhymes, dark forests, clockwork constellations, storms at sea are conjured into being with words, while the ticking clock, the ringing phone, are forgotten.

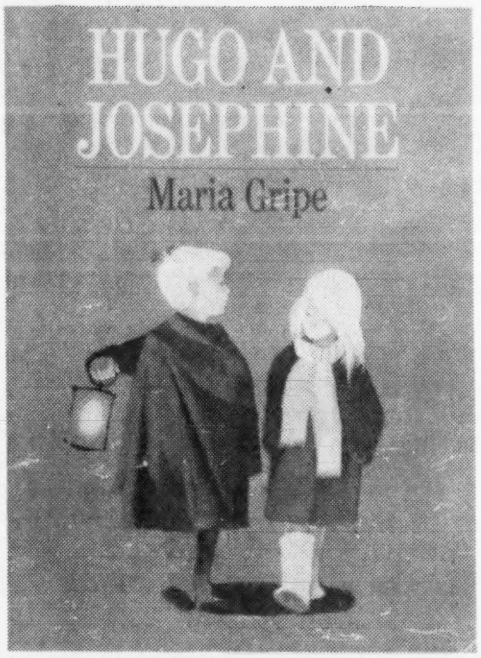
If you aren't so fortunate in your friends, do not despair. You can perform the same feat with a good book. If you've never done it before, try the experiment. Pick up **The Jungle Book**, **Dominic**, **Zlateh the Goat**, **The Porcelain Man**, **Freddy Rides Again**, **The Bee Man of Orn**, and start to read. You don't need to be an actor, just read the words. The kids will pick up on it first, drifting to you from whatever else has occupied them. Keep reading, and if the conversation about decentralized economy and solar energy at the other end of the room isn't too loud and intense you will soon have the big people in your power, too.

Choose a story you enjoy yourself; if you don't enjoy it, no one else will, either. Don't be misguided into choosing something to read for its instructive or moral impact. Kids are turned off by stories which are no more than deceptive packages designed to sell them some current educational principle: race relations, tonsillectomy, women's rights, conservation, ecology, Mommy's new baby, drug abuse, arithmetic or even reading itself. ("What's this, propaganda?" says Mae West playing school-marm in "My Little Chickadee.") A good story-teller has something to tell, not something to sell, and his stories will always contain interesting and often profound elements drawn from the variety of his own experience. The Dr. Dolittle stories, for example, deal forcefully with such subjects as conservation, war, the rights of non-human animals to the resources of the planet, the disruption of integrated but "primitive" cultures by the most well-intentioned introduction of medicine and technology. Babar the Elephant's adventures begin with the abrupt and shocking death of his mother, and throughout the most ludicrous and hair-raising adventures the Bastable children are haunted by grief for their mother's death. Animal husbandry, details of arachnid anatomy, loneliness and fear of death, goose psychology, friendship, love, death, the struggles of composition, the unbearable joy and tragedy of existence abound in **Charlotte's Web**. Maria discovers in **Mistress Masham's Repose** a self-sufficient, utopian society based on humanitarian principles, and learns as well the awful responsibility of having power over others. Such ideas are simply and inevitably part of these stories; what a child learns from them is by the experience of involvement in the story as a whole.

I emphasize the story because story-telling is becoming a lost art, and its decline coincides not only with a general weakening of cultural bonds but also with modern children's difficulties with written and spoken language. The sole reason for Peter Pan's visits to civilization is "to hear the stories" – they are the one element his infantile fantasy-land cannot provide and yet they are also its very substance. It is through stories that children first learn of the unlimited possibilities and magic powers of words: to delight, to frighten, to fool, to outwit, to belittle, to damn, to bless, to explain, to amuse, to excite, to conjure – i.e., to control. A child once acquainted with such powers wants the magic words for itself and will eagerly pursue the elements of reading, writing and speech that provide them. The best of television, movies, audio-visual aids, etc., can never replace the story-teller in this function.

This lady has written before about children's stories in the **CQ**. *The previous occasion was an amazing letter-to-the-editor we printed as "The Most Unusual Letter We've Ever Received" (Spring, 1977). That piece was fiction, it turned out – story-telling about story-telling – but its context of Oregon country intelligence, Hoedads, Citizens Against Toxic Sprays, and such, was true to the Van Strum niche in Tidewater, Oregon.*

–SB



Maria Gripe, **Hugo and Josephine**, 1962. 168 pp. $ .75. Dell Publishing Co., Inc., 1 Dag Hammerskjold Plaza, 245 E. 47th Street, New York, NY 10017. Translated from the Swedish by Paul Britten Austin. Drawings by Harald Gripe.

A moving and often very funny story, told with beautiful economy of language. Josephine, the timid daughter of the vicar, starts school and is subjected to the bullying and cruelty of the village children until she meets Hugo, a charcoal-burner's child who brings his own special wisdom to the school. For Josephine the pressures of school threaten – as they do most children – to become all-important; for Hugo school is only a minor (sometimes even false) element in the rich experience of life. Hugo is a small version of Thoreau's French-Canadian woodcutter, with the strength and self-sufficiency of a child who has learned to take care of himself, the cheerful pragmatism of one at home in the natural world. He also has the warmth, loyalty and unshakeable sense of justice of a child who has been treated – with love and respect – as a responsible individual.

Then the teacher interrupts: "I think Hugo is quite right," she says thoughtfully. "Actually, it doesn't make much difference what one's name is. Whether our name is nice or not depends on ourselves, doesn't it?"

But Hugo waves his hand in protest.

He says in a loud voice: "There isn't much truth in those words, Miss. That's just a lot of talk made up by grown-ups to make us kids behave ourselves."

"Well, and shouldn't children behave themselves?" asks Miss Sund.

"Maybe so. Maybe not. But there's no point in trying to trick them into it. If I wasn't allowed to be called Hugo, I'd be a pack of trouble, I'll have you know."

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Once again he makes a sweep with his lantern toward the darkness of the woods.

"The forest is something you've got to stick with," he says. "If you don't, things'll turn out bad."

RICHARD KENNEDY

Here is a new and delightful children's writer. Our kids read and listen to his books again and again. Kennedy is one of a vanishing species, the gifted story-teller. Like Beatrix Potter, he not only has good tales to tell but takes fond care to tell them well; also like Potter, his books withstand repeated readings aloud without becoming oppressively boring. His language has an exuberant spontaneity, and the stories are fresh and unusual, with no trace of the labored artificiality that characterizes so many modern children's books. They are fun to read and fun to listen to.

The Parrot and the Thief, 1974; 30 pp., $4.50. Illustrated by Marcia Sewall. From Little, Brown & Co., Inc., 200 West St., Waltham, MA 02154.

Once upon a time in a village by the sea lived a disappointed man who took to stealing things.

A parrot outwits the thief who stole it by using his own tricks against him.

The Contests at Cowlick, 1975; 48 pp. $4.95. Illustrated by Marc Simont. From Little, Brown & Co., Inc.

The streets were empty, doors latched, and windows locked as Hogbone and his gang rode up the main street. Here and there an eyeball showed at a knothole or between boards, and shadows moved with cat slowness behind curtains.

Small kids especially like this story, in which a small boy cons a boastful gang of outlaws not only into trapping themselves but calling the sheriff as well.

Come Again in the Spring, 1976; 47 pp. $4.95. Illustrated by Marcia Sewall. From Harper & Row General Books, Keystone Industrial Park, Scranton, PA 18512.

"Don't give a dang what's in the book," said Old Hark. "I ain't going. Come again in the spring."

Death sighed, and took the cap off the pen. "How tiresome," he said. "Everyone tries to put it off, and all it amounts to is making a little check mark after your name." He poised his pen above the book.

Old Hark turned. "I ain't afraid of you."

"No?" Death said, looking up.

"Come again in the spring. I won't hinder you none then. But you see all these birds? Come winter time, they depend on me to feed them. They naturally ought to fly south in the fall but don't, reason that I been feeding 'em all winter since I was no bigger 'an a skip bug. They'd die if I was gone – they ain't real wintering birds. But you come back in the spring, and they'll know I won't be here next winter and have enough sense to go south."

Death (looking like a wily car-salesman and later like a harassed accountant) pleads, argues and finally makes impossible wagers with Old Hark. The reprieve may only last until spring, but the triumph of the old man and the birds is beautifully complete.

from *Oliver Hyde's Dishcloth Concert*

The Porcelain Man, 1976; 30 pp., $5.95. Illustrated by Marcia Sewall. From Little, Brown & Co.

Once upon a time at the edge of town lived a harsh man with a timid daughter who had grown pale and dreamy from too much obedience.

An extraordinary story, with a wistful irony to it. The girl and a young man eventually make a set of dishes from the pieces of the porcelain lover who freed her from her oppressive father.

They set the table with the porcelain ware, and when they were eating the girl's plate whispered up at her, "I still love you."

"Hush!" she said.

"I beg your pardon?" the young man said.

"Oh, nothing," said the girl.

And they lived happily ever after.

The Blue Stone, 1976; 93 pp., $5.95. Illustrated by Ronald Himler. From Holiday House, Inc., 18 E. 53rd Street, New York, NY 10022.

A warm, loving, "down-home" old couple find an unusual blue stone which complicates their lives in more ways than anyone could wish or imagine. The book opens with the old wife swallowing the stone by mistake and turning into a chicken.

He got a box, then filled it with straw and stuck it near the fire and bedded down the chicken with plenty of feed and water. He wasn't hungry himself and sat at the table deeply worried, watching the chicken.

"Look, Bertie," Jack said. "I'll do your mending for you to entertain you, and I'll sing to you." He picked up the mending and sang to the chicken, which was resting comfortably. All the rest of the day he attended to comforting the chicken and trying to amuse it, and then it was time for bed. He knelt down and kissed the chicken on the head and said good night.

"One night as a chicken can't do much harm, Bertie," he said. "And maybe it has a meaning in it somewhere. If the worse happens, I'll build you the finest roost in the world. I love you, Bertie."

Oliver Hyde's Dishcloth Concert, 1977; 47 pp., $4.95. Illustrated by Robert Andrew Parker. From Little, Brown & Co., Inc.

Grief and bitterness over his long-dead bride have turned an old fiddler into an eccentric recluse, given to hiding from view by draping a dishcloth over his head. The trick he sets out to play – "It wasn't a great trick . . . but just a miserable little one to make sure nobody could have a good time" – back-fires on him when he plays a concert in the wrong barn to an audience of grain sacks, old saddles and bales of hay.

He stood there with his head down, understanding things, and how it felt to be on the other side of the darkness and silence when all you wanted was some sign of life to help out.

WALTER R. BROOKS

To and Again (reissued as **Freddy Goes to Florida**), **Freddy the Detective**, **The Clockwork Twin**, **Wiggins for President**, etc. 1927 - 1958. Illustrated (brilliantly) by Kurt Wiese. Alfred A. Knopf.

Now woefully out of print. These are great stories which can be enjoyed on many levels (they are the reason a number of adults I know feel a start of fond recognition at sight of the Knopf imprint on a book). Kids still love them; the few copies left in school and public libraries are lovingly dog-eared, softened by years of use, and seldom on the shelves.

Children, before they are taught otherwise, tend to have an egalitarian attitude toward animals, seeing them as fellow creatures who lead more varied and interesting lives than civilized humans and are closer to the rhythms of birth, life, death and necessity. Freddy is a pig and – like the other animals in these books – a unique and complex individual. He tries everything: poet, detective, politician, newspaper editor, banker, pilot, musician, football player, cowboy, magician, camper, etc., and I haven't known a kid to read these yet (including myself) who didn't follow suit. Freddy's entanglements over logic and grammar with two owls are wonderfully-funny discussions of the way words are used and what we really mean by them, and his often ridiculed sympathy with his enemies' plight leads him to some novel efforts to change their offensive behavior.

From **Freddy the Detective.**

Like most lazy people, Freddy could work and work hard when he wanted to. But when he didn't want to – well, he just didn't want to. And he had a hunch that being governor was a full-time job. But several years later, he did run for office. He served a term as mayor of Centerboro, and it was during his administration that he solved the traffic problem which had so snarled everything up in most American cities. The Frederick Bean Traffic Plan has now been adopted in nearly every city and town in the nation. The solution was surprisingly simple: no parking within the city limits at any time. This made cars practically useless, and people gave them up and took to walking, thus improving the general health, and cutting down the cost of living. Indeed, its benefits have not been exhausted yet.

Freddy is now working on a bill to be brought up before the State Legislature, which will do away with all schools.

(From **Freddy and Simon the Dictator**)

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There was one nice thing about Freddy: he was always willing to acknowledge it when he was wrong. At least he was willing to after a while. Usually there had to be an argument first.

•

. . . He had been sitting under his tree, putting the finishing touches on the A verse of his alphabet book. It went like this:

Ants, Although Admirable, Are Awfully Aggravating

The busy ant works hard all day
And never stops to rest or play.
He carries things ten times his size,
And never grumbles, whines or cries.
And even climbing flower stalks,
He always runs, he never walks.
He loves his work, he never tires,
And never puffs, pants, or perspires.

Yet though I praise his boundless vim
I am not really fond of him.

(From **Freddy and the Ignormous**)

These are remarkable books: thoroughly enjoyable stories that – among other things – chronicle the vast and often absurd ramifications of the acquisition of language. Find a library that has a few left and read them aloud; you will enjoy them and so will anybody else who's there to listen.

SELMA LAGERLOF

The Wonderful Adventures of Nils, 1907; 539 pp. Translated from the Swedish by Velma Swanston Howard; Illustrations by H. Baumhauer. From Pantheon Books, 455 Hahn Road, Westminster, MD 21157.

Don't let a lack of children stop you from reading this incredible book. It is a glorious celebration of all the principles in Peter Warshall's "Watershed Consciousness" – and more. Transformed as punishment into a six-inch high midget, a cruel and thoughtless child is abruptly put in his place in the natural world and travels the length and breadth of Sweden with a flock of wild geese. Life as a wild creature is dangerous, frightening, and often downright uncomfortable, but always exciting; Nils Holgersson, who has never known want or need nor cared for anyone but himself, comes to experience the concern, affection and dependence by which wild things must be linked in order to survive. In becoming a member of the wild flock, Nils becomes part of a greater story than his own: the story of the forces of wind and water that shape land and life, and the configurations of geography and biological interdependence that shape the lives and behavior of all animals, including humans. Konrad Lorenz attributes the mental development of his childhood to this book and Kipling's **Jungle Book**. *Read them both.*

THE WONDERFUL ADVENTURES of NILS by SELMA LAGERLOF

But this is not all that is said of the three steps. For one must realize that when it rains on the roof of the big Smaland house, or when the snow melts up there, the water has to go somewhere; and then, naturally, a lot of it is spilled over the big stairway. In the beginning it probably oozed over the whole stairway, big as it was; then cracks appeared in it, and, gradually, the water has accustomed itself to flow alongside of it, in well dug-out grooves. And water is water, whatever one does with it. It never has any rest. In one place it cuts and files away, and in another it adds to. Those grooves it has dug into vales, and the walls of the vales it has decked with soil; and bushes and trees and vines have clung to them ever since – so thick, and in such profusion, that they almost hide the stream of water down there in the deep. But when the streams come to the landings between the steps, they throw themselves headlong over them; this is why the water comes with such a seething rush, that it gathers strength with which to move mill-wheels and machinery – these, too, have sprung up by every waterfall.

•

. . . he went up to her, closed her eyes, folded her hands across her breast, and stroked back the thin gray hair from her face.

He thought no more about being afraid of her. He was so deeply grieved because she had been forced to live out her old age in loneliness and longing. He, at least, would watch over her dead body this night. . . .

Think, that parents can long so for their children! This he had never known. Think, that life can be as though it was over for them when the children are away! Think, if those at home longed for him in the same way that this old peasant woman had longed!

[more →]

Here is the picture of the Djinn in charge of All Deserts guiding the Magic with his magic fan. The camel is eating a twig of acadia, and he has just finished saying "humph" once too often (the Djinn told him he would), and so the Humph is coming. The long towelly-thing growing out of the thing like an onion is the Magic, and you can see the Humph on its shoulder. The Humph fits on the flat part of the Camel's back. The Camel is too busy looking at his own beautiful self in the pool of water to know what is going to happen to him.

This thought made him happy, but he dared not believe in it. He had not been such a one that anybody could long for him.

But what he had not been, perhaps he could become.

•

While they were working on the mountain, their parents were at home. By and by they began to wonder how the children were getting along. Of course it was only a joke about their planting a forest, but it might be amusing to see what they were trying to do. . . . So party after party of peasants went crowding to the top of the burnt mountain. They stood a moment and looked on. The temptation to join the workers was irresistible.

"It's a pleasure to sow one's own acres in the spring, and to think of the grain that will spring up from the earth, but this work is even more alluring," they thought.

Not only slender blades would come from that sowing, but mighty trees with tall trunks and sturdy branches. It meant giving birth not merely to a summer's grain, but to many years' growths. It meant the awakening hum of insects, the song of the thrush, the play of grouse and all kinds of life on the desolate mountain. Moreover, it was like raising a memorial for coming generations. They could have left a bare, treeless height as a heritage. Instead they were to leave a glorious forest.

Coming generations would know their forefathers had been a good and wise folk and they would remember them with reverence and gratitude.

•

"If you have learned anything at all from us, Thumbietot, you no longer think that the humans should have the whole earth to themselves," said the wild goose solemnly. "Remember, you have a large country and you can easily afford to leave a few bare rocks, a few shallow lakes and swamps, a few desolate cliffs and remote forests to us poor, dumb creatures, where we can be allowed to live in peace."

RUDYARD KIPLING

The Jungle Book and Just So Stories

Kipling's command of language was so sure and his own pleasure in it so extreme, he could play flamboyant games with it and get away with almost reckless excesses, which kids appreciate to the full. Likewise his varied and detailed knowledge of foreign landscapes, animal behavior, the language, mythology and domestic, agricultural and social practices of diverse cultures, the pompous bureaucracy of colonialism, etc., give credibility to his wildest imaginings. He wrote at a time when the British empire was in its glory, but the unquestioning acceptance of imperialism and racial superiority which can be so offensive in some of his writings are for the most part absent from these two books, where humans are seen through the eyes of the wild as foolish but unfortunately powerful creatures to be avoided or kept in abeyance in any way possible. Kids love drama and melodrama, and quickly incorporate Kipling's extravagant style into the language of their own games; such delight in language is worth a thousand textbooks.

The Jungle Book

A masterpiece. May books such as this continue to shape our lives (and not as Disney travesties, either)! With unrestrained attention to style and accurate detail, even in such a fantasy as this, Kipling creates the life and world of a child raised by wolves in the jungle of India. Disbelief is not an innate phenomenon in children, especially in reading a good story: Mowgli, Akela, the Wolf Pack, Shere-Kahn, and Bagheera are real and their wisdom is valid in any climate. The last chapter "In the Rukh (forest)" (written and added to the book later) reads in places like a Hoedad Credo and should be required reading for the US Forest Service.

". . . Is there any more diving into the deep rock-pool below the Bee-Rocks, Little Brother?"

"No. The foolish water is going all away, and I do not wish to break my head," said Mowgli, who, in those days, was quite sure that he knew as

much as any five of the Jungle People put together.

"That is thy loss. A small crack might let in some wisdom."

. . . That spring the mohwa tree, that Baloo was so fond of, never flowered. The greeny, cream-colored, waxy blossoms were heat-killed before they were born, and only a few bad-smelling petals came down when he stood on his hind legs and shook the tree. Then, inch by inch, the untempered heat crept into the heart of the Jungle, turning it yellow, brown, and at last black. The green growths in the sides of the ravines burned up to broken wires and curled films of dead stuff; the hidden pools sank down and caked over, keeping the last least footmark on their edges as if it had been cast in iron; the juicy-stemmed creepers fell away from the trees they clung to and died at their feet . . .

"It is his little money," said Messua. "We can take nothing else."

"Ah, yes. The stuff that passes from hand to hand and never grows warmer . . ." said Mowgli.

•

They are responsible for all the timber in the State forests of the Himalayas, as well as for the denuded hillsides that the monsoons wash into dry gullies and aching ravines, each cut a mouth crying aloud what carelessness can do. They experiment with battalions of foreign trees. . . . In the plains the chief part of their duty is to see that the belt fire lines in the forest reserves are kept clean. . . . They poll and lop for the stacked railway fuel . . .; they calculate the profit of their plantations to five points of decimals, they are the doctors and midwives of the . . . forests, and they are always hampered by lack of funds. But since a Forest Officer's business takes him far from the beaten roads and the regular stations, he learns to grow wise in more than wood-lore alone; to know the people and the polity of the jungle . . . He spends much time in saddle or under canvas – the friend of newly planted trees, the associate of uncouth rangers and hairy trackers – till the woods that show his care in turn set their mark upon him, and he ceases to sing the naughty French songs he learned at Nancy, and grows silent with the silent things of the undergrowth."

Just So Stories

Wild, extravagant tales of how things became the way they are – like something written by someone who read Darwin under the influence of opium. Both the language and the stories are so wonderfully outrageous, kids come back to them again and again, and even grandfathers never tire of reading them aloud. Kipling illustrated these stories himself, and his pictures, with their elaborate captions, are the funniest parts of the book.

Once upon a time, on an uninhabited island on the shores of the Red Sea, there lived a Parsee from whose hat the rays of the sun were reflected in more-than-oriental splendour. And the Parsee lived by the Red Sea with nothing but his hat and his knife and a cooking-stove of the kind that you must particularly never touch . . .

(How the Rhinoceros Got His Skin)

Hear and attend and listen; for this befell and happened and became and was, O my Best Beloved, when the Tame animals were wild. The Dog was wild, and the Horse was wild, and the Cow was wild, and the Sheep was wild, and the Pig was wild – as wild as wild could be – and they walked in the Wet Wild Woods by their wild lones. But the wildest of all the wild animals was the Cat. He walked by himself, and all places were alike to him. . . . Of course the Man was wild too . . .

(The Cat That Walked by Himself) ■

This is the picture of the Cat that Walked by Himself, walking by his wild lone through the Wet Wild Woods and waving his wild tail. There is nothing else in the picture except some toadstools. They had to grow there because the woods were so wet. The lumpy thing on the low branch isn't a bird. It is moss that grew there because the Wild Woods were so wet.

Underneath the truly picture is a picture of the cozy Cave that the Man and the Woman went to after the Baby came. It was their summer Cave, and they planted wheat in front of it. The Man is riding on the Horse to find the Cow and bring her back to the Cave to be milked. He is holding up his hand to call the Dog, who has swum across to the other side of the river, looking for rabbits.

Storytelling and The World of Storytelling

After you've read your children some of the books Carol van Strum recommends ("On Storytelling," p. 128), you might want to try telling them stories eye to eye without a book. This kind of telling creates a special excitement for both speaker and listener. Here are two books that can help you to begin and get better.

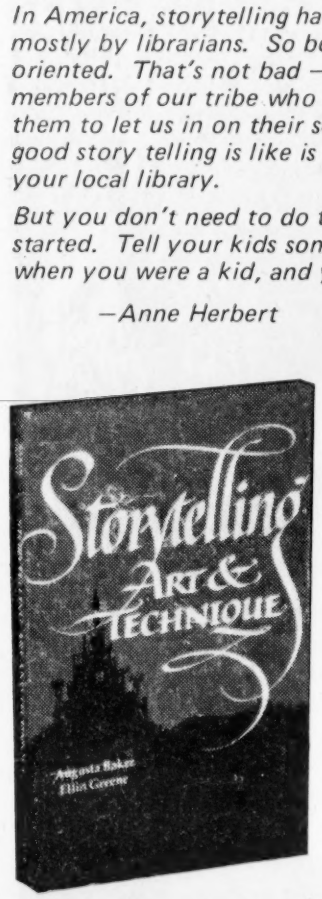
Storytelling: Art and Technique *is simple, straightforward advice on how to make it through the story hour. Practical, specific, helpful and not scary. It lists lots of sources for good stories to tell.*

The World of Storytelling *looks at storytelling in different cultures and times. It has interesting comparisons like how Angolans and Turks and Norwegians and Japanese solve the problem of ending the story. (Some do it with long rhyming formulas and some do it with one word – "end".) Much of this book is less immediately practical than the* **Storytelling** *book, but it gives you the feeling that when you tell a few stories, you're part of a long and important tradition.*

In America, storytelling has been practiced and preserved mostly by librarians. So both of these books are library oriented. That's not bad – librarians happen to be the members of our tribe who tell the stories, and it's nice of them to let us in on their secrets. An easy way to see what good story telling is like is to drop by the story hour at your local library.

But you don't need to do that or to buy any book to get started. Tell your kids something that happened to you when you were a kid, and you're on your way.

–Anne Herbert



Storytelling: Art and Technique
Augusta Baker and Ellin Greene
1977; 142 pp.
$5.95 postpaid

The World of Storytelling
Anne Pellowski
1977; 296 pp.
$14.95 postpaid

both from:
R.R. Bowker
Bowker Fulfillment Dept.
P.O. Box 1807
Ann Arbor, MI 48106
or Whole Earth

Storytelling is an individual art. Storytellers develop different methods of learning stories. However, there seem to be two basic approaches: the visual and the auditory. In the visual approach, the storyteller sees the story in a series of pictures, much like the frames of a filmstrip. In learning the story of "The Woman Who Flummoxed the Fairies," for example, the story-teller might see the following pictures:

1. the woman baking cakes and pastries for a wedding or a christening
2. the fairies longing for a bit of her cake and plotting to steal her away to be their baker
3. the woman baking cakes in the castle kitchen for the great wedding
4. the fairies hiding in flower cups and under leaves along the woman's path home
5. the fairies flying out at the woman and drifting fern seed in her eyes to make her sleepy
6. the woman asleep on the fairy mound. . . .

In the auditory approach, the storyteller is conscious of the sound of words and their arrangement. A break in the rhythm is a warning that the telling is off the track. Those who use this approach often record the story on tape before learning it. Playing back the tape in relaxed moments or while doing undemanding chores facilitiates the learning process. A word of caution may be in order for the neophyte. It is best to be sure that you want to be a storyteller *before* you tape.

–Storytelling

•

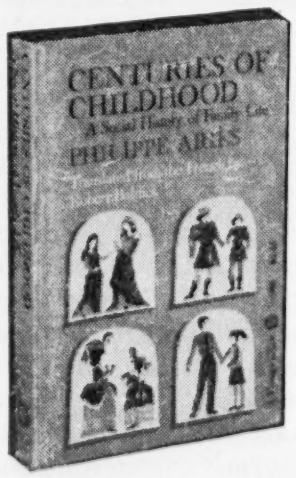
The stories that please children most are those that have to do with the childhood of their parents, grandparents, or other elders, but only if these are presented in such a way that the child can relate to them in some way. That is, they must deal with the dramatic or naughty or puzzling events of the older person's childhood, but related as they were experienced by that person as a child, and not as they are remembered in retrospect. Some of the finest examples of this kind of storytelling can be found in the books of Laura Ingalls Wilder, and any parent who would wish to learn better how to tell such stories would do well to study the parts where Pa and sometimes Ma tell Laura and her sisters about the funny, naughty, scary things they did as children. Note that invariably these are put into the third person, a much more effective voice for storytelling than the first person.

–The World of Storytelling

Centuries of Childhood

Ariès studied hundreds of medieval documents and had one of those insights that's so big that most people couldn't see it: childhood is a modern invention. In medieval times, people were infants and then when they could function independently they were the same as everybody else. People of all ages worked hard for a living, played circle games and hopscotch, listened to fairy tales, told dirty stories, and were held responsible for their own actions. Dividing these and other activities by age is a modern luxury and in many ways a fairly strange one. Our idea that you can't do anything real or important until you're at least twenty has no support in history. Ariès has lots and lots of examples of all of the above. Probably only an historian would want to read all his support, but it's good to read parts of the book to remind yourself that many of the truths we hold to be self-evident and inherent in nature are in fact almost brand new and quite arbitrary.

–Anne Herbert



Centuries of Childhood
(A Social History of Family Life)
Philippe Ariès
1960, 1965; 447 pp.
$3.45 postpaid

from:
Random House, Inc.
455 Hahn Rd.
Westminster, MD 21157
or Whole Earth

The idea of childhood profited the boys first of all, while the girls persisted much longer in the traditional way of life which confused them with the adults: we shall have cause to notice more than once this delay on the part of the women in adopting the visible forms of the essentially masculine civilization of modern times.

Imperial Messages and Minute Stories

Writers are writing more very short stories — one-paragraph to three-page complete tales. Many are as strong as they are short. I've had one collection of them, Imperial Messages, *for a year and I love it and I still haven't finished it. It sometimes takes weeks to absorb a story that took a few minutes to read.*

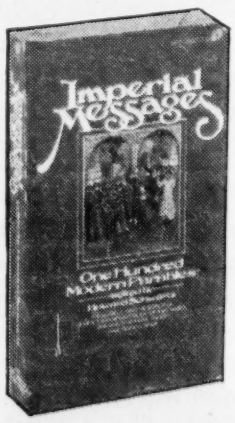
Imperial Messages *has one hundred stories in about three hundred pages. It includes familiar and unfamiliar authors like Kafka, Dostoevsky, Bob Dylan, Jakov Lind, Isak Dinesen, Mark Halperin, and Italo Calvino. And titles like "The Tramp's Sin and Charlie Chaplin," "The Glass Blower," "A Tale from the Old Buzzard's Youth," "King Solomon and the Sea," "A Very Old Man With Enormous Wings," and "The Motorcycle Social Club." There are some profound ideas in the words and between the lines of these stories. The ideas sneak up on you because the stories themselves seem so straightforward. Most of them have very traditional forms, with beginnings, middles, and ends, and complete sentences throughout. But when they're over you're left with something strange and unexpected that you can't quite define or forget.*

Minute Stories *are shorter (88 stories in 112 pages) and more recent. They're strange in technique as well as content. They are less often out-and-out profound and more often (if missing commas don't irritate you) fun. (*Minute Stories *is one volume of a special two-part issue of* TriQuarterly, *a good literary magazine. For the price, you also get the other volume which has lots of good poems.)*

In either of these books you'll find several stories you'll think about at odd moments for weeks and send to friends without comment. I think the reason that stories like this can be so powerful is that many of the stories we read and see spoil us and lie to us by explaining too much. Most of the stories we've been told in our lives are basically nineteenth century novels, with or without dirty words, illustrated with moving pictures or not, starring Telly Savalas or Phillip Roth. Nineteenth century folks thought that knowing everything about everything was desirable and possible. A nineteenth century novel, be it TV series or comic book tells you more than you'd ever be able to know in real life. These stories tell you less. The life in them is as mysterious and hard to understand as the life we have to live.

—Anne Herbert

Imperial Messages
(One Hundred
Modern Parables)
Howard Schwartz, Ed.
1976; 348 pp.
$2.50 postpaid
from:
Avon Books
250 West 55th St.
Order Dept.
6th Floor
New York, NY 10019
or Whole Earth



TriQuarterly, No. 35, Vol. I & Vol. II
(Minute Stories;
Selected Poems)
Elliot Anderson, Ed.
1976; 100+ pp. each
$4.95/set (not available separately)
from:
TriQuarterly
University Hall 101
Northwestern University
Evanston, IL 60201

THE HERO PLOT

The hero isn't even born and yet everyone knows all about his deeds, his courage, his lovers. Then one day he is born and everyone forgets what they know about him. He goes about doing his best to remind them. He dies in despair without hope of anyone ever listening to the story of his deeds, of his courage, of his lovers. After he is dead everyone remembers. How could they have forgotten? They would like to apologize but the hero is dead and waiting to be born.

—Andrei Codrescu
Minute Stories

AN IMPERIAL MESSAGE

The Emperor, so a parable runs, has sent a message to you, the humble subject, the insignificant shadow cowering in the remotest distance before the imperial sun; the Emperor from his deathbed has sent a message to you alone. He has commanded the messenger to kneel down by the bed, and has whispered the message to him; so much store did he lay on it that he ordered the messenger to whisper it back into his ear again. Then by a nod of the head he has confirmed that it is right. Yes, before the assembled spectators of his death — all the obstructing walls have been broken down, and on the spacious and loftily mounting open staircases stand in a ring the great princes of the Empire — before all these he has delivered his message. The messenger immediately sets out on his journey; a powerful, an indefatigable man; now pushing with his right arm, now with his left, he cleaves a way for himself through the throng; if he encounters resistance he points to his breast, where the symbol of the sun glitters; the way is made easier for him than it would be for any other man. But the multitudes are so vast; their numbers have no end. If he could reach the open fields how fast he would fly, and soon doubtless you would hear the welcome hammering of his fists on your door. But instead how vainly does he wear out his strength; still he is only making his way through the chambers of the innermost palace; never will he get to the end of them; and if he succeeded in that nothing would be gained; he must next fight his way down the stair; and if he succeeded in that nothing would be gained; the courts would still have to be crossed; and after the courts the second outer palace; and once more stairs and courts; and once more another palace; and so on for thousands of years; and if at last he should burst through the outermost gate — but never, never can that happen — the imperial capital would lie before him, the center of the world, crammed to bursting with its own sediment. Nobody could fight his way through here even with a message from a dead man. But you sit at your window when evening falls and dream it to yourself.

—Franz Kafka
Translated from the German by Willa and Edwin Muir
Imperial Messages

Six wishes

In the heart of Appalachia, Granny was rocking away the hours on the porch of her shanty when she got the idea to clean house. She started by wiping out the chimney of her oil lamp and as she did so, a Genii appeared. "You're old enough to know the bit about the three wishes, Grandma, so make with your first wish," he said. "Uuuummmmmm, I'd like to be a beautiful 19 year old princess." Brzap! she was transformed! "And for the second?" "Ahhhh well, a beautiful 19 year old Princess shouldn't have to live in a shanty, so I'd better have a castle." And Fazoom!, there was a beautiful palace where her shack had stood but a moment ago. "And now the third?" "A beautiful 19 year old princess with a beautiful castle should have a handsome prince. . . ." she began, and at that moment her aged tomcat began to rub against her leg. "I know . . . turn Old Tom into a handsome young prince for me!" And sure enough . . . there stood a handsome young prince. He took her gently in his arms, looked deep into her eyes and whispered, "Now aren't you sorry you had me fixed?"

Joe Eddy Brown, infamous junior high school art teacher adds this sequel from one of his students, David Johnson, 12:

"While Granny and the Prince was cleaning up after the bad news about his fix-job, the Prince wiped the oil lamp, and what do you know — this time a genii-ette! The Prince was ready. "I wish I was Un-fixed!" he yelled, "Done," she says, and KASHON! it was done. "Now I want a *huge* waterbed," he said, and KASHON! one appeared. Then he said, "Genii, Genii, my heart do pound, make my 'tool' here touch the ground." And with that — KASHON! — the Prince's legs disappeared and he crashed to the floor.

—J. Baldwin

LITTLE PRIGS & SAGES

Young Walter Scott

1783 – Sir Walter Scott, age 12

COLLECTED BY IRVING WEISS

Dear Anne Herbert,

Here are excerpts specially put together from an enormous collection I have been amassing over the years. The collection consists of the writings in English, in the original spellings and punctuation, of children before the age of thirteen, from the 15th century to World War I. (The reason I don't go beyond WWI is that since then a psychological, sentimental, even coercive interest in children's hearts and minds has taken over.)

Only some material lends itself to inclusion under "Little Prigs and Sages." I have rare curiosities like Abraham Cowley rewriting a poem he did as a child and the first version being clearly superior; two little ones writing in their journals on their deathbeds and knowing it; Cardinal Newman writing all on one page at critical times in his life from 11 to 80; Christopher Smart at age 4 writing a love poem to a lady; and many more. I call my collection of children's writings **I Sit on My Botom** *(from Margaret Fleming, age 8), and, since what you'll be publishing is the first appearance of the material in print, it would be good to indicate its provenance as an unpublished hoard.*

– Irving Weiss
New Paltz, New York

Letter from Anne Basset to her mother, Lady Lisle, written when a schoolgirl in Calais, 1536:

> **Madam, I know well that I cost you a great deal of money; but it is impossible to do otherwise, for there are many little trifles wanted here which are not needed in England: for one must do like other people.**

Letter from Edward VI of England, age 10, to Queen Catherine Parr, after the death of Henry VIII, 1547:

> **This, however, consoles us, that he is now in heaven, and that he hath gone out of this miserable world into happy and everlasting blessedness. For whoever here leads a virtuous life, and governs the state aright, as my noble father has done, whoever prompted piety and banished all ignorance, hath a most certain journey into heaven. Although nature prompts us to grieve and shed tears for the departure of him now gone from our eyes, yet Scripture and wisdom prompt us to moderate those feelings, lest we appear to have no hope at all of the resurrection of the dead.**

Letter from Samuel Mather, age 12, to his father, 1638:

> **Though I am well in body yet I question whether my soul doth prosper as my body doth, for I perceive yet to this very day, little *growth* in grace. . . . I doubt whether even God is wont to deny grace and mercy to his chosen (though**

1872 – Lady Troubridge, niece of the photographer, Julia Margaret Cameron.

uncalled) when they seek unto him by prayer for it; and therefore, seeing he doth thus deny it to me, I think that the reason of it is most like to be because I belong not unto the *election of grace*.

Acrostic verse by Isaac Watts, age 7, 1671:

I am a vile polluted lump of earth,
So I've continued ever since my birth,
Although Jehovah grace does daily give me,
I'm sure this monster Satan will deceive me,
Come, therefore, Lord, from Satan's claws
relieve me.

Letter from Jonathan Edwards, age 12, written in 1715:

I am informed y^{t} you have advanced a notion y^{t} the soul is material and keeps wth ye body till ye resurrection. As I am a profest lover of novelty you must alow me to be much entertained by this discovery. I w^{d} know whether . . . souls are not so big but y^{t} 10 or a dozen of y^{m} may be about one body whether yy will not quarrill for ye highest place.

Letter from Maria Josepha Holroyd, age 11, to her aunt, 1782:

I beg you will never make what you call an apology for not writing; you write when you please, and I write when I please without any set time. . . . I will allow you to moralise as much as you please, for the more you do, the more agreeable are your letters. The Lessons you mention as having received from my dear Grandfather are excellent; and, pray God! I may profit from them as you have. . . . You say you felt like a young woman again when you was drinking tea out of doors at Miss Cooper's. Pray how long is it since you was an old one?

Verses from a poem by Sir Walter Scott, age 12, 1783:

We often praise the evening clouds,
And tints so gay and bold,
But seldom think upon our God,
Who tinged these clouds with gold.

Letter from William Hazlitt, age 8, to his father, 1786:

I shall never forget that we came to America. . . . I think for my part that it would have been a great deal better if the white people had not found it out. Let the others have it to themselves, for it was made for them.

[more ➔]

Photographing Children

1865 – Effie Millais, by Lewis Carroll

From the journals of Louisa (Gurney) Hoare, age 12, written in 1796:

> I was very angry with Rachel for treating Chenda differently, just because she is a little older than me; there is nothing on earth I detest so much as this. I think children ought to be treated according to their merit, not their age. I love democracy, whenever and in whatever form it appears.

Letter from Mary Russell Mitford, age 11, to her father, 1799:

> My uncle called on me twice while he stayed in London, but he went away in five minutes both times. He said that he only went to fetch my aunt, and would certainly take me out when he returned. I hope that I may be wrong in my opinion of my aunt; but I again repeat, I think she has the most hypocritical drawl that I ever heard.

Verses from a poem by Percy Bysshe Shelley, age 8, 1800:

> . . . this poor little cat
> Only wanted a rat,
> To stuff out its own little maw;
> And it were as good
> *Some* people had such food,
> To make them *hold their jaw*.

Journal of Margaret Fleming, age 7 (died at 8), 1810:

> The most Devilish thing is 8 times 8 & 7 times 7 it is what nature itselfe cant endure.

Journal of Margaret Fleming, age 8, 1811:

> Heroick love doth win disgrace it is my maxium & I will follow it forever.

> O passion is a terrible thing for it leads people from sin to sin at last it gets so far as to come to greater crimes then we thought we could comit

Verses sent to her father by Elizabeth Barrett Browning, age 6, 1812:

> Oh! thou! whom Fortune led to stray
> In all the gloom of Vice's way,
> Return poor man! to Virtue's path,

Photographing Children

1865 – Angus Douglas, by Lewis Carroll

> The sweetest sweet, on this round Earth;
> Thou slumber of the peaceful mind.
> Be loving, grateful, good, and kind;
> Oh! beauteous virtue, prythee smile,
> For you the heaviest hours beguile.

Versus from a poem by Lewis Carroll, age 11, 1843:

> Lose not a button.
> Refuse cold mutton.
> Starve your canaries.
> Believe in fairies.
> If you are able,
> Don't have a stable
> With any mangers.
> Be rude to strangers.

Diary of Louisa May Alcott, age 10, 1843:

> Father asked us what was God's noblest work. Anna said *men*, but I said *babies*. Men are often bad; babies never are.

Diary of Catherine Elizabeth Havens, age 11, 1850:

> I think consciences are very troublesome, for

if they tell you you are good you feel proud, and if they tell you you are doing wrong you are unhappy.

Diary of Lady Frederick Cavendish, age 13, 1855:

Love's Labour's Lost is trash. Othello very fine. And oh, Henry the VIII!

From the diary of Annie de Rothschild, age 13, 1858:

Death is a subject to me which you can see and think of but cannot talk of. Indeed however ill he be I could never think of the death of one I love. It may be reconed as a want of faith! I know it is not. I do not mean by that, that I shall not be prepared to die when the time comes.

Journal of Kate Douglas Wiggin, age 10, 1866:

July 4th: It has been a very hot day and not much fun. I was unhappy quite a while remembering last Fourth of July when Mother was away and Aunt J. was taking care of us and she gave me five cents to spend and told me to divide it with Nora. I took three cents and gave her two because I was the oldest; and next day, and ever since, sometimes at night, I feel ashamed. . . . July 13th: I have had some trouble with lessons this week, but none at all with behavior for a very long time. It seems quite natural to be good.

From **The Desert Daisy**, by H.G. Wells, age 11, 1877:

The littery man must be emancipated from the chains & superstitious bounds of Critisism from the bonds of metre & from all social restrictions (except Copyright) & he must soar & soar like a captive balloon with the rope broke or a chained eagle on strike or a seagull on the loose or any other thing that conveys the idea of soaring such as a pig or a sewing machine. . . .

Letter from Monica Meynell, written as a girl, to her mother:

Now mother take my advise and don't be quite so estatic, you'll get on just as well in the world and much better because you'll be respected. Now just you see.

From **O Ye Jigs & Juleps**, written by Virginia Cary Hudson, age 10, 1904:

Most of the things you get somebody dies so you can get it, but you have to die your own self to get Everlasting Life.

When you are as dead as a doornail, God gives it to you, and you can't get rid of it. You can't buy it, or sell it, or trade it. You have to keep it whether it suits you or not. When you take it to Heaven with you, that's good, but when you have to take it along with you to Hell, that's different. Bishop Jordan told me Everlasting Life was God's precious gift, and I told him if it was just the same with God, I could think of things I would like better.

Autobiography of Maggie Wadelton, age 12, 1908:

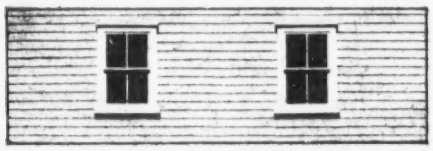
Edward told me after dinner that could I get shut of Bess we'd be off to hear the lark sing at dawn. I said could we give her haw-tea she'd sleep sound, and Edward said he was for giving it strong enough so she'd never wake at all. But that would be a great sin, the like of murder. Cain murdered Abel and see what came of it. Tis a great sin to think of it even. I don't know how to brew haw-tea anyhow. ■

Wisconsin Death Trip

The children writing here seem overly serious and sometimes morbid, but they have their reasons. In 19th century America 3 out of every 10 children died before age 13, and in earlier centuries the death rate was even higher. Funerals for babies like this were common. In England one of the most frequent epitaphs from the nineteenth century was:

This lovely bud
so young, so fair
Called home by
early doom
Just came to show
how sweet a flower
In Paradise would
bloom

–Anne Herbert



WHAT DO YOU SEE OUT OF THE WINDOW YOU LOOK OUT OF MOST?

and other small questions about mostly minor things that I'd like you to answer a few of.

BY ANNE HERBERT

1. What do you see out of the window you look out of most?
2. What did you do with your arms today?
3. What has a child told you lately?
4. What stories do you know about your grandparents? Were your grandparents in your life much when you were young? Are they now?
5. When did you have a good time singing? Who were you singing with, who to? What happened?
6. How did you make it through the bad time?
7. When did you see the sunrise? Why were you there? What happened?
8. When did you do something you'd never done in your life til then? Why did you do it? What happened? Are you still doing it?
9. What do you do that makes you tired? Do you like doing it?
10. Where is a place you go often besides the place where you work? Who are the other people there? What do you do?
11. Who do you miss? Where are they now?
12. What is something that happened where you work that you thought about for a long time after it happened?
13. What is something you made this year that you like? (Everything counts – cooking and crafts and building and art and every other kind of making.) Why did you make it? How did you make it? What happened after it was made?
14. What does your father do all day? What did your father do all day?
15. What does your mother do all day? What did your mother do all day?
16. What are clothes you like to wear? What do they look like, how do they feel? Why do you like them?
17. What are some things you do with a person you love that you wouldn't do on your own? What are some things you do for a person you love that you wouldn't do if you didn't know them?
18. What do they do where you grew up?
19. What are the words in your mind when you feel pain? What are the pictures? What do you do to get through it?
20. What stories do you know about working in a factory? What happened when you or someone else was working there?
21. What stories do you know about working outside?

22. What do you usually do at home between your evening meal and going to bed? (What do the people who live with you do?)
23. What was a good time for you? What happened exactly?
24. What are some things you do with water (all amounts – teardrop to ocean)? What does water do to you?
25. When did you do something because it was the right thing to do even though it was hard? What happened?
26. There's something you've gone out of your way to learn a lot about. It might be part of your job, something you do in your spare time, or something you've read a lot about in books. Parts of whatever it is you love a lot. There are facts, or stories, or things you've done or things that other people have done that are really interesting to you and you'd like to tell about. So tell us a few facts or stories or whatever you'd like from your best-loved subject.
27. What is a time in your childhood you'd like to live through again? What did you see then? What did you feel, taste, smell, touch?
28. When did someone teach you something that made a difference? How did they teach it? Exactly what did you learn?
29. When did you teach someone something that made a difference? How did they learn it? Exactly what did they learn?
30. What would be a good question for someone to ask you? What would you answer? ▪

EXPLANATION AND INSTRUCTIONS

Why these questions exist.

We know a lot about each other, but the things we know are too big. Major trends, widespread problems, and mass violence we hear about on the news, but it's hard to find out how other people make it through the day. So I thought I'd ask.

Why it would be a good thing for you to answer some of these questions.

I'd like to put your answers together with answers from other people and print some of them, so we can see how different our lives are, and how much the same. The samenesses and differences could be interesting, strange, wonderful in parts, and not what you or I would expect.

What good it would do you personally to answer some of these questions.

It's easy to get so busy living your life that you don't have time to notice it. Answering small questions could be a good way to look at some of the small things that fill your life. You might find your own answers interesting, strange, wonderful in parts, and not what you'd expect.

How to answer the questions.

The challenge is to actually get yourself to tell about the small things. All our social training is to pick and choose and talk about things that are large and unusual and significant and ignore the small, usual things. It's an old, strong habit.

The best way to break it is to not choose what you're going to talk about at all. Pick a question that seems interesting to you and start writing everything you know about it. Absolutely everything, just as it comes to you. As soon as you get tired of writing everything about that question, go to another interesting-to-you question and start writing everything you know about that. And when you get tired of writing everything you know about that question, go to another. (You never have to finish writing everything you know about any of the questions, but starting to is a good way to make room for small things and tell the whole truth, including parts you didn't think you knew.)

Keep picking questions and writing everything you know about them until you're tired of the whole thing. Then send what you've written to me at this address:

Anne Herbert
Box 925
Tiburon, CA 94920

You don't have to sign your name, but it would be good if you would tell where you live, your age, your sex, and what work you do.

Some of the answers will be printed in the CQ (and be paid for). I'd also like the whole thing to grow up and be a book someday, but that depends on how people respond.

Thank you a lot for whatever you have to say.

Children's Express

*One of the two best children's magazines I've seen (*Cricket – CQ *Spring '76 – is the other). It's written and edited by children which probably accounts for its highly original flavor. Its reporters (8 to 15 years old) manage to combine youthful enthusiasm with real professionalism as they cover stories ranging from teen-age jockeys to the commitment of children to psychiatric institutions.*

–Linda Williams

Children's Express
(The magazine
written by children)
Dorriet Kavanaugh, Ed.
$6.00/12 issues
from:
Children's Express
P.O. Box 982
Farmingdale, NY 11737

HORRABELLEA

Horrabellea is from Planet BQ in the 3rd Solar System. It is very hot there and very weird too, I should say. The pads at the bottom of her feet are her main source of weapons. They are hot like fire and burn her enemies. Then she will eat them up by poisoning them. And because of my one stupidity I left the fangs out. The box in the middle is an air-conditioner. Horrabellea is mainly a gentle creature, but will fight, if attacked. Check her out yourself.

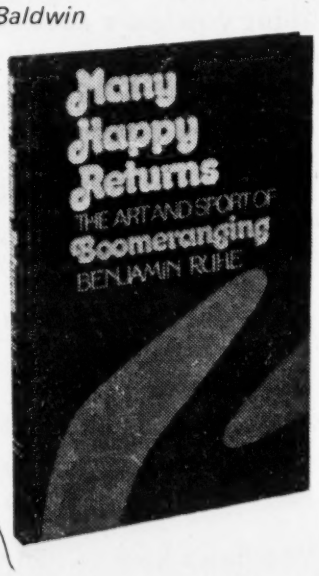
Gilly Herald, 10
Jacksonville, Illinois

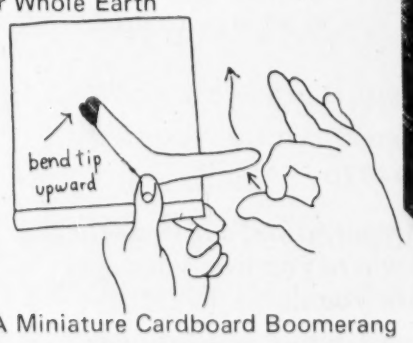
Many Happy Returns

Undocumented observation confirms that there is a little latent boomeranger in all of us. It won't be latent long if this book crosses your path; being a closet boomeranger just isn't practical. The author is the same man that got the Smithsonian into the sport (CATALOG, p. 387).

–J. Baldwin

Many Happy Returns
(The Art and Sport
of Boomeranging)
Benjamin Ruhe
1977; 105 pp.
$4.95 postpaid
from:
The Viking Press
299 Murray Hill Parkway
East Rutherford, NJ 07073
or Whole Earth





A Miniature Cardboard Boomerang

This boomerang is simplicity itself. With scissors, cut the boomerang out of a stiff card, such as a used playing card, a file card, or a cardboard folder. Three to six inches in length is about right, and any reasonable banana shape will do. Now bend up a wing tip as shown. Place it on a book for launching, and flick it sharply with a pencil or a finger.

Youth Grants in the Humanities Program

Every year the National Endowment for the Humanities awards literally thousands of dollars in Youth Grants. The funding, ranging from $2,000 to $10,000, goes to support projects which study, but are not limited to, the following: language, linguistics, literature, history, jurisprudence, philosophy, archeology, comparative religion, ethics, and those aspects of the social sciences which have humanistic content and employ humanistic methods. The name "Youth Grants" comes from NEH's preference in this category for projects designed and carried out by non-professionals under the age of 30.

Applicants must have the sponsorship of a non-profit institution to get a Youth Grant. The application procedure takes a lot of time and thought – but the rewards are well worth the trouble.

I shared a Youth Grant after graduating from college. Another student and I designed a folklore project, in which we spent almost a year documenting all kinds of old-time singing in the Blue Ridge Mountains. At the end of the grant period we produced a one-hour documentary for radio of the material. Currently we are working on a record from the same tapes. The grant paid for all our expenses plus paid a small salary.

Too bad more people don't apply for the program – it's a hell of a way to spend a year. For information write:

The National Endowment for the Humanities
Washington, D.C. 20506

–Pete Hartman
Cooperstown, New York

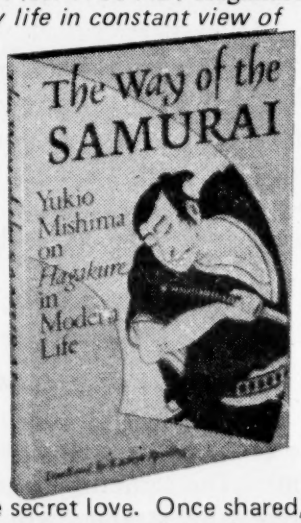
The Way of the Samurai

Danger, danger, danger, danger.

Japanese writer Yukio Mishima committed ritual suicide in 1970 in full harmony with this book, which he had completed only three years before. It is his interpretation of the famed, and often suppressed, Samurai text (ca. 1700 AD) **Hagakure.** *The subject is the conduct of daily life in constant view of death, a warrior's death.*

–SB

**The Way of
the Samurai**
(Yukio Mishima on
Hagakure in
Modern Life)
Yukio Mishima
1977; 166 pp.
$10.00 postpaid
from:
Basic Books, Inc.
10 East 53rd St.
New York, NY 10022
or Whole Earth



"The ultimate love I believe to be secret love. Once shared, love shrinks in stature. To pine away for love all one's years, to die of love without uttering the beloved's name, this is the true meaning of love." (Book Two)

•

When Englishmen drink tea, the pourer always asks each person whether he prefers "milk first" or "tea first." One might suppose that it comes to the same thing whether it is the milk or the tea that is poured into the cup first, but in this seemingly rather trivial matter the English ideology of life is staunchly in evidence. Certain Englishmen are convinced that milk should be poured into the teacup first, then the tea, and if one were to reverse the order, doubtless they would see the act as the first step to violation of the principles they hold most dear.

What Jocho means by "One should take important considerations lightly" is that, as a tiny anthole may cause a dike to collapse, one must pay attention to the little theories that govern our daily life waking and sleeping, the minor beliefs. This is a good lesson for our perverted day and age, in which only ideology is valued and the trifling practices of everyday life are not taken seriously.

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Thank you

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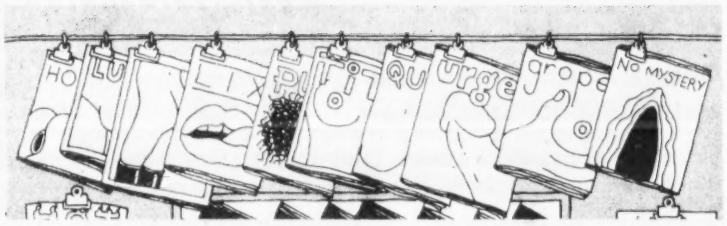


CQ IS a dirty magazine

Dear Anne Herbert,

. . . The Broadcasting issue was pretty smutty. Is that necessary? My grade school daughters read your magazine; I just recommended it to a director of novices as part of a formation program. I'm not a prude but I have taste! Mainly I'd like to see you be all things to all men and not limit yourself in matters not crucial.

Please extend our subscription for 2 years. Enclosed (I hope) is a good check.

Sincerely,

Marylee Mitcham
New Hope, Kentucky

Dear Marylee Mitcham,

You're not the only one to complain about the Winter issue being in less than perfect taste but you are the only one to renew your sub for two years while complaining. I sort of know what you mean and yet disagree. First I disagree that we should limit ourselves to things that are crucial (what about the mole jokes by your son Mark?) — I think we should limit ourselves to what is in some sense valuable — often valuable in a minor way. Stewart pretty much does that — he will print anything that is in some sense, in his eyes valuable — sometimes valuable as a dialogue starter. The things he prints often do not fit other people's ideas of value at all and they see the magazine as wasting its time in a somewhat immoral way. He gives his guest editors the same freedom and they elicit the same reactions, sometimes. But I think it's important for them to continue to proclaim to the world what they find valuable without considering people's children and directors of novices and relatives. Because doing that is a kind of personal integrity that is very rare in publishing — most magazines will never print things that offend you because they don't want their advertisers to get scared that you, the consumer, are being offended. We are dealing with you the thinker — a stranger person and more worthy of respect than the consumer. Therefore we should give you all valuable things and not be that afraid of your reaction.

Offending people is a complicated thing — some people were offended by the Who Cut Down the Sacred Tree? article because it said that medieval Catholicism was a good thing and they thought it was irresponsible of us to indicate that Catholicism was a good thing or that any religion can be a good thing. Some people felt very strongly about that. Others thought we were just this side of immoral for printing space colony stuff, or anything about the business implications of voluntary simplicity. My general feeling is we print strong, real stuff and in the course of a subscription you will love some a lot and hate some a lot — it's a natural result of non-blandness.

Your original question actually was "Is that necessary?" Actually I think the entire magazine is superfluous, but that whatever you found smutty was an important part of the valuable irrelevance of it all. It's embarrassing or annoying to recommend something to someone and then to have them be offended by it. It happens to me sometimes — I work here and am sometimes assigned responsibility by relatives for things that I wouldn't have chosen to print. However, I think that if CQ ever becomes a safe gift that you can really be sure people will love, it won't be a good magazine any more.

One other thing I thought of while writing this is that the offended letters of complaint I see are almost always partially on behalf of someone else. That is, people are offended not primarily for themselves but for their children or someone they gave the magazine to. I'm not sure what that means but it's interesting.

I hope it's okay that I took this occasion to work out my thoughts in smuttiness in the CQ. Many who complain do it in a way that totally cuts off further communication. A few comments on staff depravity, a cancellation, and it's all over. Your comments on my comments are welcome.

Anne Herbert
Assistant Editor

Word from the Complaint Department

The winter months usually make the act of "getting there" more trying. Holiday traffic, foul weather, and human migration patterns challenge our ability to get your orders to you on time, untattered, etc. Lately, we've been flooded with mail — gift subscriptions, "last chance" renewals, and, as always, the address changes of our incredibly mobile readership. All of these variations and events can cause confusing problems. Heed, then, these reminders and suggestions. . .

As most readers will know by now, our price has gone up to $12/year. Subscribers who send in the old $8.00 rate will receive an abbreviated three-issue subscription, a card informing them of same, and an early renewal notice.

Speaking of renewal notices, our apologies to those who have been tormented by multi-mailers. You receive the notice, dutifully send in your check, and then another renewal plea arrives . . . ggrrr! It takes awhile for our computer to catch up — usually it's just an overlap-timing problem, and you should ignore the additional notice. It all depends on two little numbers — the last two numbers on the top line of your mailing label. These tell us (and you) your expiration date. For example:

824140AKLEA	3000	1223
ANNIE OAKLEY 10 WINGSHOT AVE CODY WY 82414	(Misc. office codes)	(term)

Annie's subscription began with issue No. 12, Winter '76 (the first two digits of the term) and will expire with issue No. 23, Fall '79 (the last two digits).

Mistakes *do* happen. If you're in doubt (or infuriated), send us a note and we'll check it out for you. If you are already a subscriber and should happen to renew without a form or a mailing label, be sure to tell us that the order is a renewal.

In fact, anytime you have a particular problem, please send us as much pertinent information as you have at your disposal; i.e., past and present addresses, and dates and amounts of checks. Your mailing label is *especially* helpful. Legible handwriting helps, too. If you've ordered something and haven't received it, be aware that delivery can take up to six weeks in this country, and two months for foreign addresses. Patience, patience. . .

If you're moving, please let us know *immediately*. We must know your new address at least a week before our mailing dates (the 15th of March, June, September and December) to avoid the most frequent problem we face: the non-receipt of issues. Because we send magazines second class rates, post offices will usually not forward them to new addresses. Thus, you receive your magazine late and we lose money in having to mail it twice.

Canadian post offices are hassling us about Canadian postal codes. If your Canadian mailing label has no code on it, please send us one soon! Also note that our Canadian and other foreign subscription rates have increased.

A lot of readers have asked about getting their **CQ** mailed in an envelope or a mailing sleeve. We think it's a great idea, but sadly it must be done by hand since there isn't a mailing house in the Bay Area equipped to do this for bulk service. We're still working on it. (In the meantime, all foreign subscriptions will be mailed in envelopes, as well as retainer, sustainer, etc. For an additional $5.00 per year, U.S. subscriptions can also be sent first class, in envelopes.)

We do appreciate your comments and letters — every one of them gets read and heeded. We hope that this has answered some of your questions.

CQ Subscription Staff
Dick, Ben, Isabella, David, Rosanne

Herman Kahn changes his mind

On the question of nuclear energy Kahn said a year ago in the Spring '77 **CQ** *that it was too late to limit the international proliferation of nuclear reactors, that he regretted that, but he saw no way of revising it. "The barn door's just way open."*

Last Fall (September '77) Herman was in a televised discussion (not yet aired) with Margaret Mead and William Irwin Thompson, hosted by Kevin Sanders (who sent the transcript to us). Kahn said, among other things:

> A couple of years ago I would have told you that the barn doors were open and nothing can stop plutonium. I've sort of changed my mind. To my surprise the anti-nuclear movement has much greater strength than I would have expected. Parts of it are irrational and a-rational, but that doesn't change its strength. And it would not surprise me completely (that's a careful statement) if the plutonium economy and the breeder reactor could be stopped. And I think it would be a very good thing to stop.

–SB

Does CQ sell your name? (No)

Stuart & company,

I've been keeping track of who sells my name and address to other mailers (a secret method!) – and you know who came out on top of the list? C.Q. that's who! Now, the stuff we get from these other people is quite interesting – and I suppose it does generate some moolah for CQ – BUT – BUT – BUT, why don't you ask if your readers want their names and addresses sold. It is like tourists who steal a little bit of the famous places they visit each time they snap a photograph. Each time you sell my address, you steal a little bit of me and give to a complete stranger & a strange machine! I appreciate hearing your views on this modern day practice – perhaps you have some insights. I don't have!

Charles Spencer Bedard
Cambridge, Massachusetts

Dear Mr. Bedard,

Thanks for enclosing a 2-year renewal with your quite reasonable beef.

We don't sell our mailing list to anybody, not even our expires (other magazines do – see below). What we do is TRADE – usually on a name-for-name basis – with other publications and services that we think will be of interest to our readers. We don't trade unless the item in question is something we would review in the magazine. From that point of view the junk mail you get through us is an extension of the content of the magazine, at no expense to you or us.

We trade because we must do direct mail promotion of the magazine, or we would have perished long ago. It's the only form of advertising we do. Besides trading we also buy lists. Statistically, you may well have come to the **CQ** *through such a list.*

We applaud your secret method of keeping track of who sells your name. We assume it's a different minor variation in your name or address for each business you deal with by mail order. A good practice for all.

As we've mentioned before, LET US KNOW IF YOU DON'T WANT YOUR NAME TRADED. A secrecy code is then added to your label, as we've already done to yours in response to your letter.

To explain further the surprising world of direct mail, here's Mike Young, who organizes ours . . .

Stewart Brand

Some time ago some magazines discovered that more money could be made through the rental of their mailing lists than from the publication of their magazines. Larger magazines (and list owners) limit the use of their list by specifying required mailing dates (by reservation in advance), and by limiting the rental of their list to 2 or 3 times per month.

The more specialized the magazine (or list) the more useful it is to other specialized users. It would be unproductive for **CQ** to use the **Time** list . . . it doesn't isolate the audience that we want to speak to. Therefore, the smaller and more unique magazines are more inclined to rent or exchange.

The smaller folks are usually newer at publishing and need more promotion to get off the ground. This also explains why older established magazines like **New Yorker** and **National Geographic** don't need to promote for new subscribers . . . their audience is loyal and renews heavily.

Magazines that promote a lot usually exchange and rent their list. They also exchange ad space for others' mailing lists. For example **Mother Jones** – all those ads (until last month) were exchanges, no paid advertising. Some more established magazines put their unrenewed subscribers (expires) on the market. Most, when they do this, enter into a partnership with list management firms which promote the lists to prospective renters, and split the profits with the magazines – big bucks. Lastly, it is virtually always the practice to see the mailing piece of the list renter before a list owner will give approval.

Some magazines have a flat policy of not renting names, but even this is occasionally overlooked when a list owner may offer his list to a friendly cause or wish to sponsor an offshoot enterprise. **Sunset Magazine** had a never-rent policy, but they have recently changed this to aid some friendly mail-order nursery firms, and later decided to rent their expires. **Scientific American** puts their expires as far back as 5 years on the market (via a list manager). **Smithsonian Magazine** exchanges its list only. Some magazines do not rent or exchange their subscribers, but do rent names from related activities, like book clubs.

In general more magazines are renting their lists and in more sophisticated manners: **Newsweek** makes available subscribers by edition (students, regions), as well as active subscribers, expires, those who have recently renewed, recently become new subscribers or recently moved. (Footnote: a few years ago **Newsweek** waited about 3 weeks after their subscribers moved and sent a subscription solicitation to the occupant at the old address. Great success. It seems that certain neighborhoods are **Newsweek** neighborhoods, and whoever moves in is likely to be a **Newsweek** person.) **Psychology Today** will rent their list by sex of subscriber, recency of subscription, and by how that subscriber came to the magazine – via direct mail promo, insert in magazine, space ad, magazine agency, etc.

Although some people think it should be illegal to rent your name without your permission, the federal privacy commission last year decided to tentatively recommend that list owners couldn't be required not to rent a mailing list. They cited difficulty to enforce and cost to industry, plus fear that large mailers will use other, more offensive forms of direct sales (automated telephone sales pitches, for instance). They proposed that list owners may have to let a person know that they have his name and rent it. Many publications are announcing that fact. It is not now required to have the computer keep a subscriber's name from being rented if the subscriber has so requested, but it probably will be within 5 years. We hope so.

A stronger question of privacy comes up when lists are exchanged for merge-purge (matched in a computer to avoid name duplication). The commission concluded that rarely any information besides the name and address is exchanged. Still, during **CQ**'s merge-purge for our promotion we were able to determine how many **CQ** subscribers are also subscribers to **Mother Jones** and we got a glimpse at how much overlap there is between **Mother Jones** and **Quest** . We could have, if we wanted, isolated each of these overlapping groups and sent them individual letters, depending on which magazines they subscribe to, and which groups they belong to. That profile is very easy to do, fairly cheap, and many people are comparing lists with census data (now available, at great cost, by zip code). It isn't a difficult task to identify someone who is especially unusual for his neighborhood.

The merge-purge isn't as air-tight as those who sell the service would lead you to believe, but many of the methods are becoming very sophisticated. The surest safeguard against getting mail you don't want is the privacy option ("don't rent my name"), and the Direct Mail Marketing Association's "Mail Preference" service. You can ask to be on a list which takes you off direct mail promotion at the merge-purge step.

If you want no junk mail, write to:

Direct Mail/Marketing Association, Inc.
6 East 43 Street
New York, NY 10017

–Mike Young

R. Crumb in big trouble with IRS

Shafted by crooked lawyers. Needs $35,000 to clear debt. Wants to sell entire estate all at once. Consists of fabulous collection of pre-war 78 RPM records – jazz, blues, country and ethnic. Prime comic book collection, hundreds of esoteric magazines, books, and other printed matter. Old packages, old toys, dolls and robots. Several dozen pages of original art work and other things. Knick-Knacks (Aline is tired of dusting them anyway) and other household items. 35 G's takes all.

Serious inquiries only. R. Crumb, c/o CoEvolution Quarterly, Box 428, Sausalito, CA 94965.

—Susan Goodrick

Note: In an effort to keep Crumb's museum and soul intact a number of us are seeing about organizing an R. Crumb Benefit this summer. Tom Campbell, organizer of innumerable anti-nuclear benefits for Simpatico, has agreed to handle the event if we can line up the talent. This is an appeal for people who could help fill an 8,000 seat house (that's about what's needed) to get in touch with CQ. *I see it as repayment. Crumb comix have helped us out of a couple of psychic corners.*

—SB

Robert Crumb and Aline Kominsky got married. This is Aline, drawn by R.

Just sail

Sofia, an 89 foot, three-masted schooner and floating cooperative, is looking for crew members. Since being restored from very battered condition in 1969 (a process described in "To sail, just sail," in the Winter, 1974 **CQ**), *Sofia* has hauled cargo in the Caribbean, fished in New Zealand, sunk in the Galapagos, and in nine years, sailed around the world. She's had 50 or 60 crew members, about 10 at a time. Most of the present crew is going back to shore this spring, but they would like the adventure to continue for new people. Past members have usually put $1500 - $2500 into the boat and become part owners. Present crew member Brad Ives writes, "By trading and the continual scrounging of supplies, *Sofia* can get by. She needs money for capital outlay and gear, she needs a crew with the drive and knowledge to sail and take care of her. We are sailing for Brazil in February and should be in Barbados 'til the end of March. Anyone who is interested in sailing on *Sofia* on a permanent basis and has money and knowledge should write Barbados or better yet show up there. We made a living of it and with a few astute businessmen aboard there is no reason to work ashore or sweat too much where the next buck is coming from."

Sofia

The address is:

American Schooner Sofia
General Delivery
Bridgetown, Barbados
West Indies

For information on how to contact *Sofia* after March, ask:

Kansas
2040 Lawndale
Kenwood, CA 95452
(415) 751-3844
(707) 833-6477

—Anne Herbert

Gossip

Anne Herbert got a prize. Her story "Snake" which appeared in The CQ *was selected for inclusion in* The Pushcart Prize III: Best of the Small Presses *(1978-79 edition). In a blaze of objectivity Anne returned the favor with her review of the Pushcart books on p. 122.*

In other publishing news, Ken Kesey's sporadic Spit in the Ocean *is clearing its throat for issues No. 3 and No. 4 from Rt. 8, Box 477, Pleasant Hill, OR 97401, one issue edited by Tim Leary, the other by Lee Marrs, both with some of Kesey's novel* The Demon Box. *Issues are $2.50 each or $12 for all seven.*

A word about John Muir, one of the best of small publishers ever. His How to Keep Your Volkswagon Alive – A Manual of Step-by-Step Procedures for the Compleat Idiot *sold one million copies and showed a generation how intelligent a how-to book could be. The ten or so books from John Muir Publications, with their characteristic rounded corners, were remarkable for their consistently high quality.*

John Muir died last November, at 59 of a brain tumor. A Santa Fe paper wrote: "He'd made up his mind that he had fought it long enough. He announced that he wouldn't do it any longer. He went without raging or fighting or cursing, but with total acceptance. There were six of us in his room. We sat in a circle around him and we all chanted 'om.' One of us rubbed his solar plexus, where the soul is joined to the body. We helped release him so he wouldn't stay behind. He squeezed my hand hard, breathed heavily, and then let go." The wake, it is reported, was memorable.

CQ*'s retaining, sustaining, and maniacal subscribers have helped us immeasurably over the years. Every now and then someone has gone beyond maniacal and it's time to report what we do about that. The anonymous $25,000 that came in last year was used to initiate our series of "CoEvolution Books," which are rapidly generating income of their own.* Space Colonies *is doing well enough to be due for a third updating and reprinting. Peter Warshall's* Watersheds *and J. Baldwin's* Soft Tech *are in simultaneous production with this* CQ *and will be available later this Spring (announcement on p. 144). This year to our shock we got $5,000 from a different anonymous donor. That money is going into the preparation of a computer photo-map poster "1,000,000 Galaxies," to be announced in the summer issue.*

Meanwhile the first printing of 3,000 copies of "Biogeographical Provinces" has sold out. After detailed consultation with author Miklos Udvardy, theorist Ray Dasmann, and cartographer Ted Oberlander, an exhaustively reworked new edition is being printed. Maps are very odd. One measure of the amount of information in something is the number of hard-to-detect but significant mistakes that occur and have to be purged. The second edition of "Biogeographical Provinces" has over 50 corrections and additions, and they're barely noticeable. A photograph you can't correct at all. An equivalent amount of biogeographical information in text form would be a horrible fat book, unusable. Interesting.

New bods in the lunchtime volleyball mob scene these triple-production days are Randall Goodall, Kathy O'Neill, and Web DeHoff. Randall, 29, doing design and paste-up on Soft Tech, *is the founder and head of the Bay Area Artists in Print Directory. Kathy, 30, a fine artist and traveller, has worked previously on* Musicworks *and* Coyote Howls. *Web, 31, is writing and designing our direct mail, subscription renewal notices, and other flackery – unglamorous, essential duty. He used to work out of Madison Avenue for clients like IBM,* Oui, *Citibank, and the U.S. Navy.*

CQ*'s welcome growth, to 70,000 copies this issue, has had one unwelcome side effect. We've outgrown the capacity of our printer and good friend Bob Parks, who printed the first* Whole Earth Catalog *(1,000 copies) in 1968 and nearly everything we've done since. Between us we've slung a lot of ink. It felt good all the way.*

To help us get used to the idea of having been around for 10 years we're planning an event for late in the summer. Among other things we'd like to get in touch with everyone who worked at Whole Earth over the years. Sandra Tcherepnin, Peter Ratner, Mary McCabe, Transistor Sisters, Austin Jenkins, Troll, Ant Farm, Jane Burton, Steve Leaper, Al Perrin, Doris Herrick, etc., etc., etc. . . . where are you guys?

—SB

CoEvolution Quarterly — Spring '78 Financial Report

EXPENSES	Nov.,Dec.,Jan. (Predicted)	Nov.,Dec.,Jan. (Actual)	Feb.,Mar.,Apr. (Prediction)
Salaries and fees			
Office	$ 17,000	$ 22,481.78	$ 24,000
Production	7,750	8,844.41	9,500
Editors	12,000	11,459.76	9,000
Contributors	6,000	7,344.22	5,000
Office rental, materials, etc.	9,500	13,413.87	13,500
Phone	1,700	1,608.13	1,700
Promotion	32,500	23,472.49	33,500
Printing	29,200	31,230.22	37,500
	(65,000 copies)	(65,000 copies)	(70,000 copies)
Subscription process and mail	12,250	12,302.42	11,000
Shipping	1,000	1,058.86	1,100
Business reply	1,400	2,105.00	1,500
Refunds	250	490.07	450
Total	$130,550	$135,811.23	$147,750
INCOME			
Subscriptions, gifts and renewals	$ 93,500	$110,304.03	$125,000
Retaining and Sustaining	3,500	3,170.00	3,000
Back issues	6,000	6,368.92	5,000
Distribution	12,250	17,777.39	18,000
Total	$115,250	$137,620.34	$151,000
NET PROFIT OR (LOSS)	($ 15,300)	$ 1,809.11	$ 3,250

POINT Financial Report

CQ (detail above)	PAST QUARTER* Nov.,Dec.,Jan. '77-'78
INCOME	$137,620.34
EXPENSE	135,811.23
CQ Books	
INCOME	
Penguin	52,083.32
Direct Mail-Order	2,736.24
EXPENSE	
Production & Mail-Order Supplies	31,043.19
Catalog & Epilog	
INCOME	
Penguin	10,673.90
Direct Mail-Order	3,504.59
EXPENSE	
Production & Mail-Order Supplies	3,871.03
Maps, Posters, Postcards, II Cybernetic Frontiers	
INCOME	3,746.12
EXPENSE	682.75
Miscellaneous	
INCOME	
Dividend Payment	625.00
Anonymous grant	5,000.00
EXPENSE	
Point, Miscellaneous	706.84
TOTALS	
INCOME	$215,989.51
EXPENSE	$172,115.04

*Next fall we will again report the year's totals.

POINT Balance Statement
31 January 1978

ASSETS	
Cash in bank	$89,737.86
Investments	27,344.75
Accounts receivable Distribution	36,462.74
INVENTORY	
Back issues, CQ	53,399.21
Maps, posters, post cards	844.60
Mail-order LWEC & WEE	4,224.00
Mail-order CQ Books	510.00
Penguin inventory	
CATALOG ($1.73)	4,849.19
EPILOG ($1.01)	66,188.33
LIABILITIES	
Accounts payable	—
Deferred SB salary	24,750.00
Subscription liability	93,932.00
LOSSES	
Dolphin Project loan	8,000.00

'Or Whole Earth'

That phrase under the access of an item in **The CQ** *means that you can mail order it from:*

Whole Earth Truck Store
558 Santa Cruz Avenue
Menlo Park, CA 94025

Note: Please add $.50 to any order to cover shipping and handling. Inquire for UPS, Air Mail, or foreign postage charges.

Anything other than items so listed --- orders for books, maps, etc. published by **CQ**, *or letters, material for the magazine, subscriptions, contributions, complaints --- should be sent to:*

The CoEvolution Quarterly
Box 428
Sausalito, CA 94965

PACIFIC DRAINAGE

LUNA LEOPOLD

Former Chief Hydrologist for the US Geological Survey, Professor at UC Berkeley, author of many books on water and geomorphology.

WATER SOURCE: Well, where I live it comes from East Bay Mud (Municipal Utilities District), which is really a combination of Sierra water plus water from the Berkeley Hills. But, you can't really distinguish what water when you turn on the tap . . . which part of it comes from where.

WATER DESTINATION: There are several disposal plants in the Bay (San Francisco Bay). In this part of the Bay Area, the East Bay, obviously, the sewage goes into the Bay (near the Oakland-San Francisco Bridge). That's the area you're concerned about.

PW: Does it go through the Berkeley treatment plant? Is that secondary or tertiary now?

Leopold: No, it's not tertiary for sure.

YOUR WATERSHED'S NAME: El Cerrito Creek flows into the Bay, through North Richmond, immediately south of where Wild Cat Creek comes in.

PW: Is there a big storm sewer?

Leopold: Where I live it goes under a bunch of streets and about, oh, an eighth of a mile downstream from where I live, there it essentially goes into a conduit and does not appear again until comes out practically at the Bay.

PW: It goes under that fill?

Leopold: Yeah.

ARE THESE IMPORTANT QUESTIONS? You're darned right. As a matter of fact, I have in the past often asked audiences, when you're talking to local conservationists, "Look, I think you're spending too much time on the Corps of Engineers, let's start out at home." And I ask them, "What is happening in your own little community?" And I can remember I have at times not gotten very good reception to that. They say, "Look, you're trying to by-pass the big issue," and I say, "I'm not trying to by-pass it at all. I think the issue starts at home because if we can't do it, if you can't do it in your little community, then how do you expect all of us together to do it on a very large scale?"

PW: What you said is exactly why I'm doing this book.

GREGORY BATESON

Anthropologist, cybernetician, and author of Steps to an Ecology of Mind

WATER SOURCE: It comes from a well about a hundred and fifty yards below my house, and a pump raises it from the well.

WATER DESTINATION: Ah. When the toilet flushes: now that's more difficult. I can tell you what my suspicion is. That it goes direct into the well. It smells like that, the well does.

PW: My gosh.

Bateson: Well, we try not to drink it. We drink water from Crystal Springs Water Co. They have a spring somewhere up in the top of this entire grade region, I'm not quite sure where, and no doubt they'll go dry soon.

PW: So your water, when you flush the toilet, goes into a septic tank or something?

Bateson: It goes into a septic tank and through that into the well, I take it. It doesn't go direct into the well, no.

YOUR WATERSHED'S NAME: The water runs over on this side into the San Lorenzo valley and into the San Lorenzo River. There is also a dam. The Corps of Engineers dammed something and called it Loch Lomond. We're in Ben Lomond, and Loch Lomond, which contains quite a lot of water actually, is a sort of reserve supply for Ben Lomond, I think. I don't know really where Loch Lomond goes to, mainly. I'm told we don't use it all the time. I suspect the main supply feeds into Santa Cruz, probably.

ARE THESE IMPORTANT QUESTIONS? Ummm. Yes. I'm inclined to think people should know the answers to them. I think there are a lot of such things they should know, besides the water cycle. I think they should know that their energy comes from their food, for example. I think they should know that they make the images they see, you know, that when you look at me and you see this pretty brown thing with a pink blob at one end and a brown middle, then you made that picture. And a lot of things like that are not taught. Right?

PW: The question that no one has really been able to answer is where their electricity comes from.

Bateson: Where our electricity comes from? Ah. That I do not know. That's correct. We know that on the East coast they had this fantastic blow out in which practically all the power from New York to Montreal went.

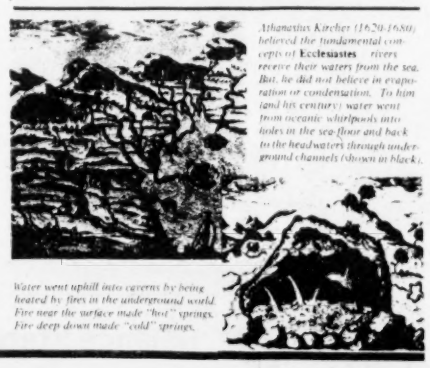
PW: I think out here a lot of the water that is used hydro-electrically comes from the Feather River and there's some stuff that still comes from steam production, too.

Bateson: We don't yet have an atomic plant feeding us with electricity.

PW: Well, there is one.

Bateson: There's one in Morro Bay isn't there? That's only 60 miles south of here.

PW: Right. So that may be the supply for Santa Cruz. Anyway, the question of our sources of electricity always stumps everyone.



Athanasius Kircher (1620-1680) believed the fundamental concepts of Ecclesiastes *– rivers receive their waters from the sea. But, he did not believe in evaporation or condensation. To him (and his century) water went from oceanic whirlpools into holes in the sea-floor and back to the headwaters through underground channels (shown in black).*

Water went uphill into caverns by being heated by fires in the underground world. Fire near the surface made "hot" springs. Fire deep down made "cold" springs.

WATERSHEDS – a subject that's never had a book before. Nearly all new material from Peter Warshall, who did the Watershed issue of *CQ* (Winter '76/'77) – our most popular issue. 160 pages.

$5 postpaid to CQ *subscribers ($1 off retail). For delivery July, 1978.*

SOFT-TECH

Edited by J. Baldwin & Stewart Brand

A Penguin Book

I didn't believe in the alternate-energy future until I saw how dull it was gonna be and how stupid the slogans were gonna be and how much I wasn't gonna like it. Then I knew it would come.

– Steve Baer
Solar Inventor

SOFT TECH – all in one place, re-evaluated and updated, the gamut of *CQ*'s soft technology articles and reviews, edited by J. Baldwin, who's lent a skilled hand to most of the innovative groups working. 176 pages.

$4 postpaid to CQ *subscribers ($1 off retail). For delivery June, 1978.*

$4

to CQ subscribers

($1 off retail)

"The book is a delight – hilarious, interesting, well-written and edited . . . If you have the slightest inkling of interest in Space – as an energy source, lifestyle, or vision – then this book is a must. And I'm opposed to Space Colonies."

–Helene Kassler
Solar Age

$2

Postpaid

"Reworked magazine pieces by a sensitive analyst of science and technology. . . . A sketchy if enthusiastic introduction to the person and the subtle thought of the philosophical psychologist and anthropologist Gregory Bateson. . . . Brand visits, appraises and portrays the computer hacks; the technicians of the discipline. . . . They are young men and women who are 'brilliant but not very interested in conventional goals,' artisans of the mind. . . . Their stance has its own irony: addiction, like the gambler's."

–Philip Morrison
Scientific American

Order Form

We've enclosed an envelope, overleaf

Self

NOTE: *Foreign subscriptions (including Canada): $14/one year, $23/two years (U.S. funds)*

Please mark in boxes clearly.

- [1] 1 year CQ $12
- [2] 2 years CQ $21
- [3] PLEASE CHECK IF THIS IS A RENEWAL
- [4] CQ back issues — $3 each
  Issues: _____
  (See overleaf for issues available.)
- [5] Whole Earth CATALOG — $8
- [6] Whole Earth EPILOG — $4
- [7] BIOGEOGRAPHICAL MAP — $3
- [8] SPACE COLONIES Book — $4
- [9] SOFT TECHNOLOGY Book — $4 (for delivery June 1978)
- [10] WATERSHEDS Book — $5 (for delivery July 1978)
- [11] TWO CYBERNETIC FRONTIERS Book — $2

All subscriptions start with current issue, and are sent via surface mail. For special service (mailed in envelope, first class or airmail) check box below:

☐ FIRST CLASS (U.S. & Canada) — Add $5 per year.
AIRMAIL — Add per year: Mexico & Central America $6, South America $9, Europe $9, all others $12.

RETAINING, SUSTAINING, & MANIACAL SUBSCRIPTIONS

☐ **RETAINING:** *$30/year. $18 tax-deductible. You get your* **CQ** *in an envelope, delivered first class, and we gratefully publish your name and town (unless you say not to). It's tax-deductible because we're a non-profit corporation.*

☐ **SUSTAINING:** *$100/year. $88 tax-deductible. You get your* **CQ** *in an envelope, airmail, and we gratefully bless your name and town in the magazine (unless you say no).*

☐ **MANIACAL:** *$1000/life. $988 tax-deductible. You get your* **CQ** *in an envelope, airmail, for the rest of your life (or ours, whichever comes first).*

Name _____

PLACE YOUR LABEL HERE

Zip _____

6171

Please make sure your address is correct and complete, including zip or postal code number.

$ _____
Total Enclosed

Please make checks payable to:
The CoEvolution Quarterly
Box 428
Sausalito, California 94965

Please allow 3-6 weeks for delivery.

Gift

Numbered boxes are identified on 'Self' order form, above.

Please mark in boxes clearly.

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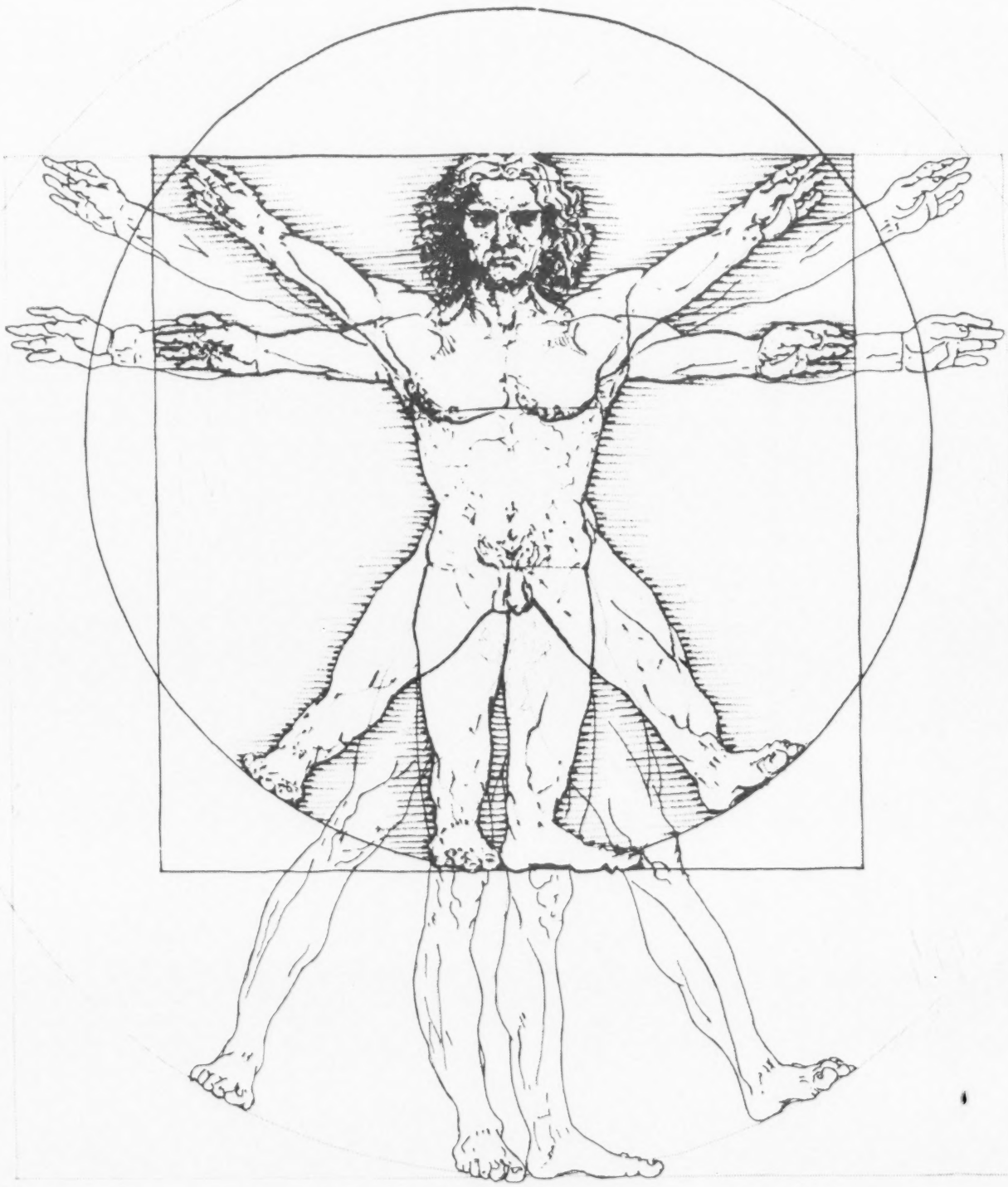

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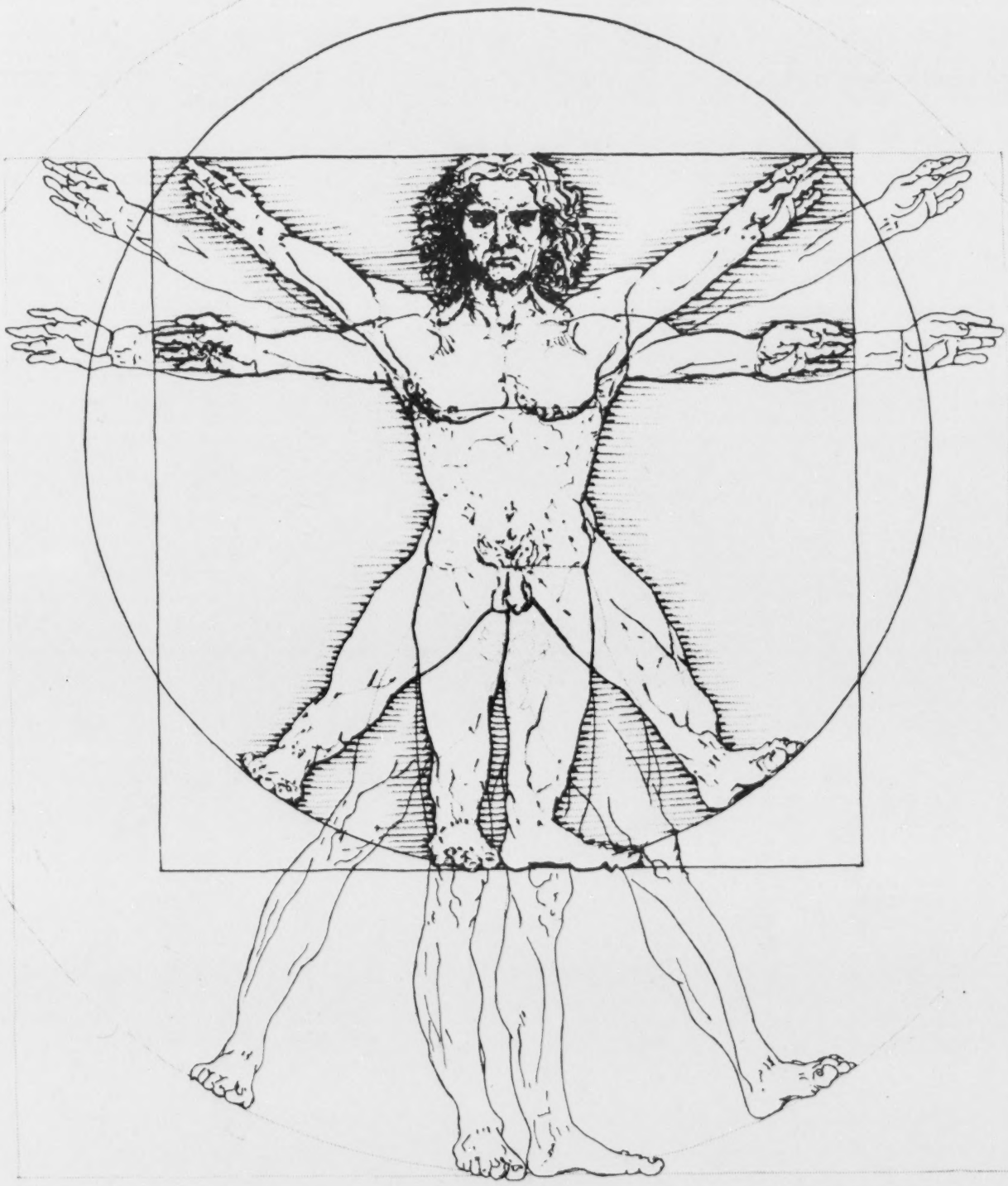

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Q. Who is the least known hermit?

A. The most successful.

Q: What is the Chinese hermit's name?

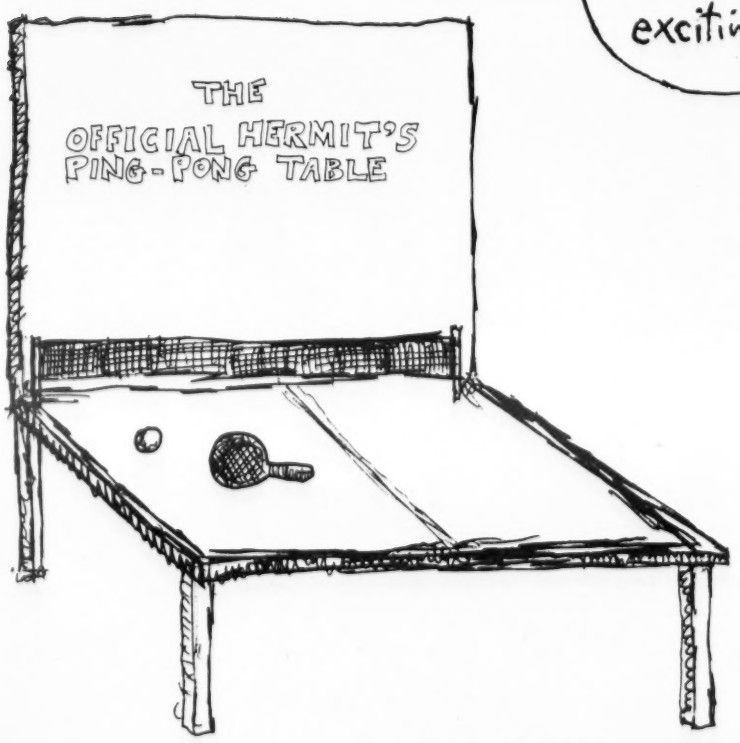
A: Lone Lee.

Q. How did the hermit crack his mirror?

A. Playing Pat-a-cake.

Q: Why did the hermit go into the bank?

A: To get alone.



Q: What does a contemplative cheerleader do?

A: Just stands there.

Mark Mitchan

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